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WELCOME

“WE HOPE YOU’LL ALLOW YOURSELF A MOMENT OF WARM NOSTALGIA”



The games industry runs in cycles. I’ve said it countless times before (for I also run in cycles). What greater proof could there be than a month in the year 2020 that sees the launch of a new *Doom* and, impossibly, a *Half-Life* sequel?

So it seemed the right time to look back on where these classic series began, and why their impact is still felt so

powerfully. In these apocalyptic times, we hope you’ll allow yourself a moment of warm nostalgia as you flick through these pages.

You might even learn something. Remember, those who don’t know their history are doomed to repeat *Doom*.

ROBIN VALENTINE
PRINT EDITOR
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The PC Gamer team



ANDY KELLY
Specialist in
VR self-isolation

Twitter
[@ultrabrilliant](https://twitter.com/ultrabrilliant)

This month
Chatted to the legendary John Romero, and managed to resist mentioning *Daikatana*.



JAMES DAVENPORT
Specialist in
Perfect... timing

Twitter
[@my_beards](https://twitter.com/my_beards)

This month
Made it to PAX East, the last videogame event before the Great Cancellation.



RACHEL WATTS
Specialist in
Horror games for the colour-blind

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This month
Discovered just how scary a screen of only black and white pixels can be.



FRASER BROWN
Specialist in
Going viral

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[@FraserIBrown](https://twitter.com/FraserIBrown)

This month
Dived into the coronavirus’ impact on gaming. Don’t worry, he wore gloves.

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MAY 2020

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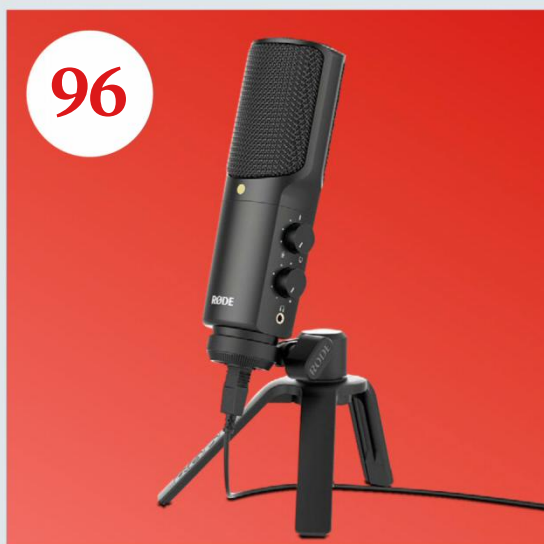
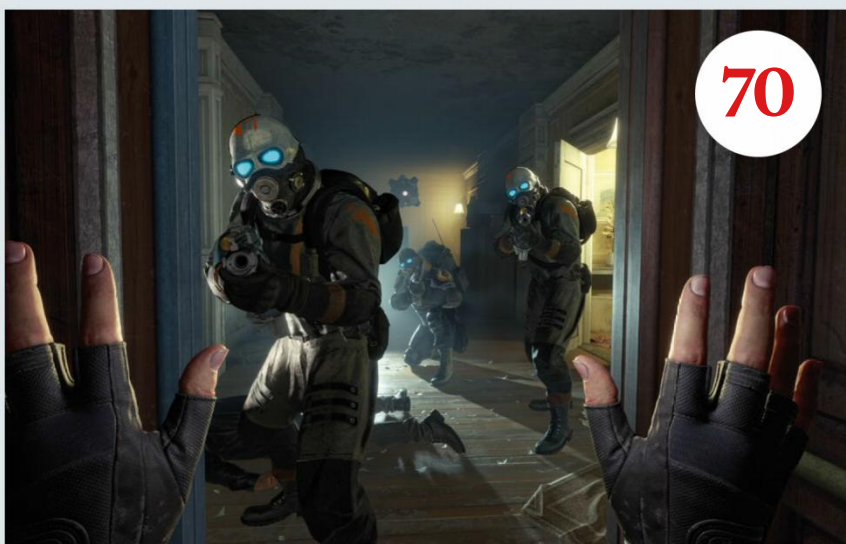
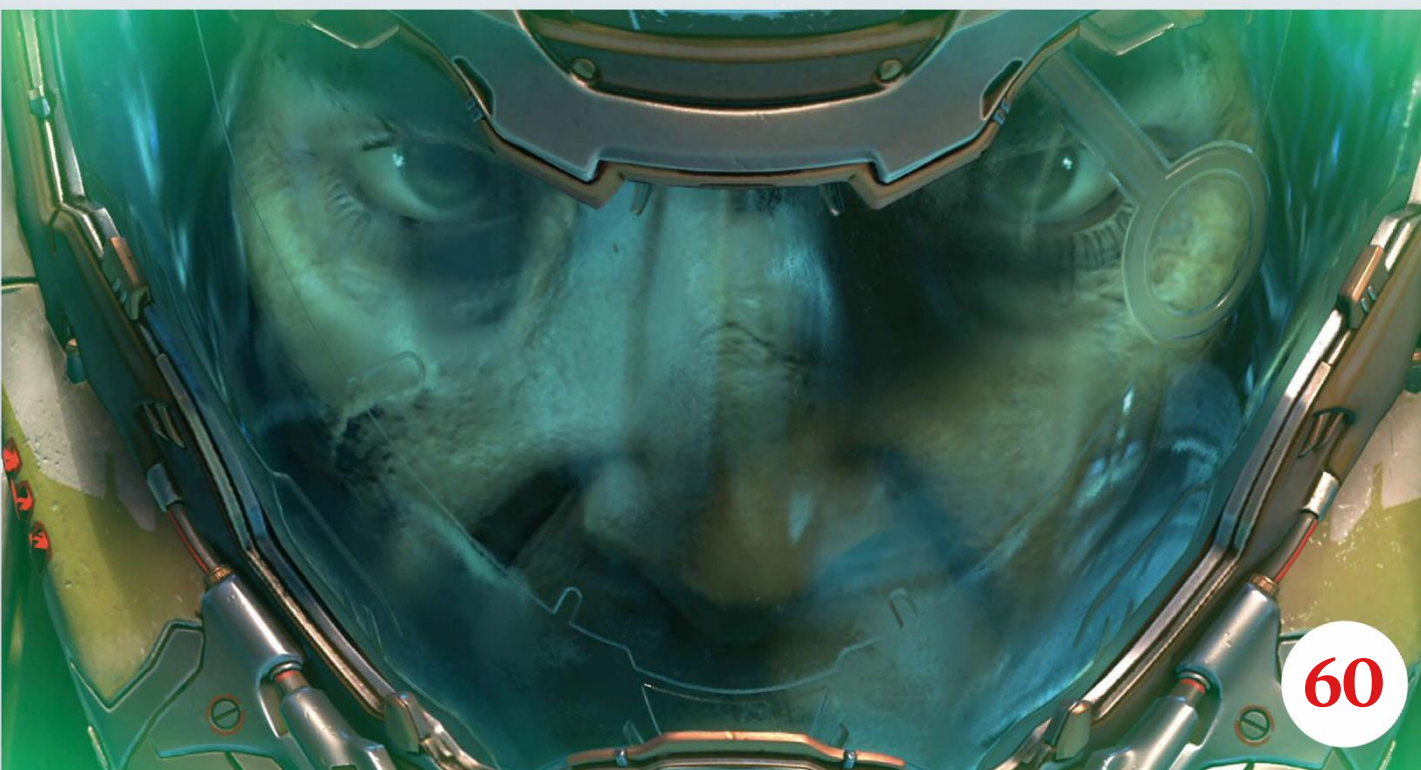
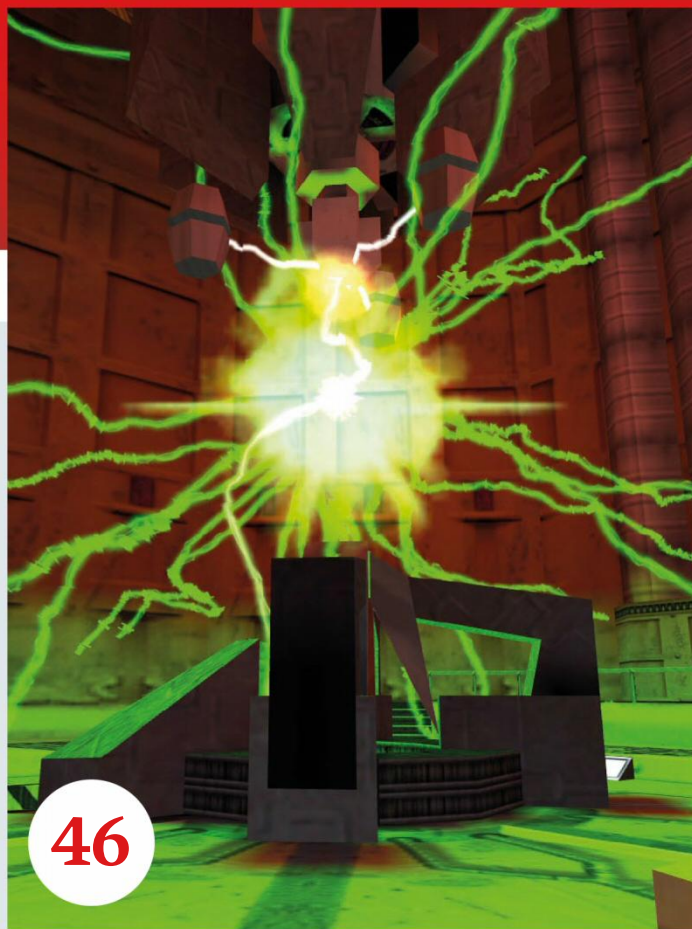
Harmonix' latest attempt to keep the rhythm genre alive lets you spin together your own music remixes on the fly – and there's something familiar about it...

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John Romero joins us for a (hell) fireside chat looking back on the legacy and impact of the original *Doom* – and the wild confidence that went into making it.

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Valve's Dario Casali offers his thoughts on the enduring influence of the ground-breaking original *Half-Life*, and its new fan remake *Black Mesa*.



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MONITOR

NEWS | OPINION | DEVELOPMENT



THE SHOW WON'T GO ON

The ESA has officially cancelled E3 2020 due to the coronavirus

A growing list of gaming and industry events have been postponed or cancelled due to concerns about the coronavirus, including GDC and E3. While E3 doesn't take place until June, the ESA has decided not to risk continuing its plans given the escalating outbreak.

Events started being cancelled in China back in January, including the Taipei Game Show and several esports leagues, while Chinese companies started sending employees home. This also had a knock-on effect

internationally – *Path of Exile* developer Grinding Gear Games, for instance, is expected to delay the beta of its sequel because Chinese artists weren't able to work.

In February, PUBG Corp postponed *PlayerUnknown's Battlegrounds'* first event of the year,

**MORE
CANCELLATIONS AND
POSTPONEMENTS
SEEM LIKELY**

PGS: Berlin. Shortly after, IEM: Katowice's licence was revoked by the Polish government, though the *Counter-Strike: Global Offensive* Major and *Starcraft 2* tournament broadcast still went ahead online. Several other European events followed suit, including TwitchCon Amsterdam and *EVE* Fanfest.

Sony, Square Enix, Capcom, CD Projekt Red and PUBG Corp all pulled out of PAX East in Boston as more companies decided to restrict travel, and when San Francisco declared a health emergency, the organisers of GDC hit pause on the event. Refunds were issued, but attendees were still left with financial

BACK TO EARTH

WORMS 2020



Team17's classic series returns for yet another new entry. "Get ready for *Worms* like you've never played before!" promises the announcement tweet – but the teaser leans on as dated a reference as the holy hand grenade, and it's hard to know what new twist the developer could put on the series. ■RV

TRIAL BY FIRE

DESTINY 2



Proper competitive firefights are coming to *Destiny 2*. *The Season of the Worthy* update adds the Trials of Osiris, a deadly 3 vs 3 mode that measures win streaks. Oh, also a giant spaceship is coming to crush the last city on Earth. ■TS

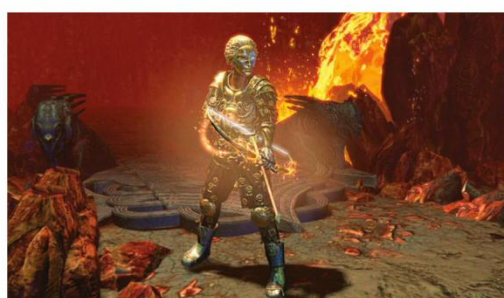
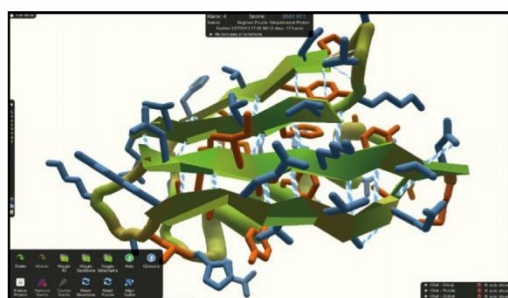


COD ROYALE

CALL OF DUTY: WARZONE



Following weeks of leaks, *Call of Duty*'s free battle royale mode released for everyone. There are over 300 points of interest in the vast Verdansk map, plus two modes, vehicles and some intriguing second chance mechanics that may just give the genre the shot in the arm it needs, so to speak. ■HS



ABOVE, TOP: Blizzard has cancelled some esports events, including *Overwatch* League matches.

ABOVE, BOTTOM LEFT: *Foldit* uses protein puzzles to crowdsource scientific research.

ABOVE, BOTTOM RIGHT: *Path of Exile 2* is among the in-development games affected by the outbreaks.

burdens thanks to sunk travel costs, as well as time wasted on preparing demos and presentations.

GOING VIRAL

GDC's organisers have said it will return in the summer, but no dates have been announced yet. E3 2020 was also meant to kick off in the summer, with the ESA saying it was going ahead with the event when it was asked at the start of March. That's no longer the case, but E3 could still continue as an online show.

As more countries start battenning down the hatches and enacting measures to stop the spread of the virus – like France forbidding gatherings of more than 1,000 people – more cancellations and postponements seem likely, while the industry in general will continue to see an impact as more companies in affected regions advise their employees to cut down on travel or stay at home.

In more positive news, researchers from Washington University are hoping to crowdsource a vaccine for coronavirus through *Foldit*, a 2008 game that tasks players with solving complex puzzles using protein chains. The team has now added the virus to the game in the hopes that players will collaborate on designs that can then be used in real-world experiments.

Fraser Brown

Highs & Lows



HIGHS

Amnesia: Rebirth

Frictional Games finally revealed its spooky sequel. This time it's set in Algeria, and it's out this year.

Horizon Zero Dawn

Guerrilla's open-world, robo-slaying romp is heading to PC this summer, along with its expansion.

Star Wars Battlefront 2

Baby Yoda has finally blessed *Battlefront 2* thanks to a modder, just in time for the latest big update.

GeForce Now

Nvidia's cloud gaming platform is promising, but games are being pulled after a disagreement between Nvidia and publishers.

Twitch

Call of Duty streamer Carl Riemer has been suspended by Twitch after accidentally discharging a handgun during a livestream.

Descent

The *Descent* reboot seems doomed following a legal dispute.

LOWS



The Spy

[] BUT WHO WATCHES THE SPY?

Like most people in the 21st century, The Spy's sense of self-worth is derived from how much better The Spy is than other people at handling a crisis. And let The Spy tell you: The Spy is absolutely *nailing* this working-from-home quarantine thing. Provisions? The Spy has no need of your panic-bought pasta and tinned tomatoes. The Spy once spent an extended period in the jungles of Borneo, based on an admittedly foolish hunch that Rockstar might have buried some *GTA VI* secrets there, and discovered a fondness for insects as a source of protein.

Exercise? Forget a standing desk, The Spy operates from a squatting desk – years of crouch-walking through waist-high grass having blessed The Spy with thighs the size and density of tree trunks. Social distancing? It's literally in the job description.

As for the job itself, it turns out that reading potentially too much into the actions of games publishers requires zero physical contact. Case in point, Rockstar recently posted new versions of its logo to its website. In one, a robot reminiscent of the works of Hajime Sorayama is embracing the R* logo. Another features overlaid text with phrases like 'Murdering Hope', 'Fighting The Righteous', and 'Bullying The Weak'.



THE SPY
The Spy will never touch your face.

IT'S LONG BEEN RUMOURED THAT A HARRY POTTER RPG WAS THE NEXT GAME FROM AVALANCHE

Fan speculation includes an imminent *GTA VI* reveal, a sequel to open world school-'em-up *Bully*, and even the return of the stealth action game *Agent* – an unlikely choice given that its trademark was declared abandoned in 2018. The Spy's guess? Frankly, we're long overdue a *Smuggler's Run* reboot. That or an art designer had some spare time on their hands.

Elsewhere, it's long been rumoured that a Harry Potter RPG was the next game from *Just Cause* developer Avalanche. The studio recently posted a job listing for a lighting artist, supposedly for an "exciting, soon to be announced AAA title". What this means is... absolutely nothing. What studio is going to advertise a boring, never-to-be-announced budget title? Nevertheless, the Harry Potter series has retained its relevance over the years by being the only point of reference middle class newspaper columnists with verified Twitter accounts have for explaining the global geopolitical landscape, so a game isn't outside the realms of possibility.

WITCH HUNT

Meanwhile, CD Projekt Red is already working on its next game – the one after the recently delayed *Cyberpunk 2077*. While it's not confirmed what it'll be, the recent Netflix *Witcher* series caused a huge spike in sales for *The Witcher 3*. With a second series in the works, CD Projekt Red's choice largely comes down to whether they want the massive pile of money that's on the table or not. The Spy imagines they probably do. That said, even if the studio does make another game based on Andrzej Sapkowski's setting, it won't be *The Witcher 4*. In light of rumours to the contrary, CDPR CEO Adam Kiciński reiterated that *The Witcher 3* was the end of the trilogy.

If we really are getting a new Rockstar game, a Harry Potter RPG and a new spin on the world of *The Witcher*, it's just as well The Spy's prepared for an extended period of self-isolation.

Really all you need is a constant, self-sustaining supply of food, a bit of exercise and plenty of toilet roll. Wait, toilet roll? Oh no... The Spy's out. ■
The Spy

This month in... 2010



1 Crack open the bag containing this issue's PC Gamer and you're treated to a stark, bold cover featuring Kerrigan as the star. This issue teased the return of the world's most popular RTS. Looking back, *StarCraft II* transformed PC gaming and popularised esports worldwide. Here's hoping Blizzard is still capable of one day recapturing that magic.

ISSUE
213, May 2010
ON THE COVER
StarCraft II
IN THE CINEMAS
Iron Man II

2 Marsh Davies' preview of *The Witcher 2* had this great pun: "From rags to witches". And also revealed CD Projekt Red's plans following the flawed first game.



3 Jim Rossignol celebrates the PC's most arty games, from *The Path to Passage* to, er, *BioShock*. 2010 was a hotbed of indie experimentation, which – if you look at PC gaming today – never really ended. Here we highlighted some of the early trailblazers of experimental systems, art styles and narrative. And *BioShock*.

FOREGONE



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Special Report

PCG INVESTIGATES



The second game, *EYE*, contains a big clue to solving the first one.

DEAD SERVER

How the spooky **NO PLAYERS ONLINE** launched a fascinating ARG

The game starts with an image of a VHS tape, hovering on your desktop. Click on that, and the game begins with a sketchy MS-DOS-style menu. A multiplayer server list appears on the screen. They're all empty. Click on one, and you enter a lonely CTF match of a *Quake*-era FPS, with blocky geometry and fuzzy textures. Return the flag once, and strange things start happening: *Twin Peaks*-esque music will blare from a record player that appears in one part of the map. A mysterious dark figure appears to be watching you, flickering away as you get closer.

The dark figure reappears. You discover the server is keeping someone alive. Its creator joins the game, and begs you not to return the flag for a third and final time. When you do, this short, free narrative game on itch.io called *No Players Online* ends. An empty multiplayer map, it turns out, is a fantastic setting for a horror game.

"For me it started because I was doing a course in level design, so we were building a level for *Unreal Tournament*," says designer Adam Pype, who made *No Players Online* with friends Viktor Klaus and Ward D'Heer. "When you make a level, you spend a lot of time just walking around empty maps, and observing the environment and checking the design. I thought it was a

real cool atmosphere, just walking around multiplayer-designed maps all on your own. I thought this would be a good premise for a horror thing."

Pype submitted the game to the Haunted PS1 jam in November 2019. That should've been the end of *No Players Online*, but it wasn't. What came next was an sprawling, unsettling ARG that involved a Belgian phone number, a real-life note hidden in a forest, and an entirely different game that hid clues to unravelling the true ending. This would capture the imaginations of an audience of amateur sleuths.

ARGs, or 'Alternate Reality Games', are elaborate puzzles that draw on out-of-game and real world elements that fans have to investigate and figure out. *No Players Online* grew into an ARG simply because people were over-thinking what was already there.

"You'd play for ten minutes or something, that's what we made in the first four days to put in for the jam," Pype says. "I added a small Easter egg that if you quit out of the game and played it again, there was one line [of dialogue] that was different. But after the game launched and got attention, I saw videos of people finding that Easter egg and being obsessed, thinking there must be more to it. I thought I'd screw with them, and add a little extra part to it, so that something would happen. And we kept on adding stuff until we accidentally made an entire ARG."



CTF hell

No Players Online is a free itch.io game you can download right now, set in an empty online CTF FPS map, where different things change about the map each time you return the flag. You can finish it in about 15 minutes, but unlocking the true ending is a much more complicated endeavour.



FAR LEFT: Walking off of this pier is scary as hell.

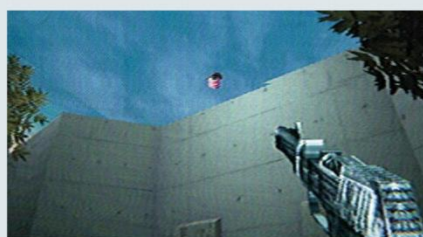
LEFT: This figure shares the server with you in *No Players Online*.

THE ARG EXPLAINED *The best parts of No Players Online's metagame*



EYE

A first-person game made by a fictional developer, which ends with a video filmed in the woods which hides a clue.



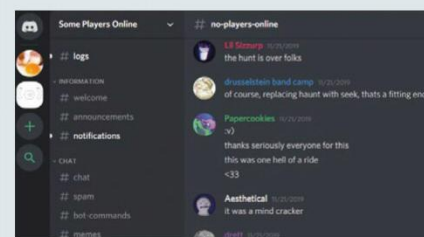
THE PHONE CALL

It's disconnected now, but the developer set up a phone message that buried Morse code in its audio.



THE FAKE EMAIL ADDRESS

Drop john.mullard@yahoo.com an email for a strange autoreply that deepens the game's fiction.



THE DISCORD SERVER

The amazing community that deciphered *No Players Online* tracked their discoveries on Discord.

The developer would add a fake email address to the game's itch.io page. Emailing that gave you a spooky autoreply from a fictional developer. In the signature, there was a link to a Geocities-esque itch.io page for an unknown game called *EYE*.

EYE is about walking a dog down a dark path, but you can never actually see the dog. After a minute of walking, you come to a pier. When you walk off the pier, a nasty sound effect plays and *EYE* closes. Another image of a VHS tape appears on your desktop, mirroring the start of *No Players Online*. That video offers another clue that leads to its true finale. The idea of using an entirely different game to help solve the mystery is very cool, and it helps you buy into this fiction of long-abandoned game projects that have taken on a sinister life of their own.

GHOST STORIES

An entire community formed around solving the game's many mysteries. "They set up a Discord server, where they were solving the riddles," says sound designer Viktor Klaus. "And I actually joined it, because my name wasn't in the credits for *No Players Online* itself back then, and they didn't know I actually worked on the game. And I saw them solving everything. We thought they would solve it in a week, and they solved it in an hour or something. It was amazing."

"It was really made up on the go," Pype says. Not all parts of the ARG were solved by players – an automated phone message hiding Morse code had to be published on

Bandcamp because the audio quality was too poor on a traditional landline. In one instance, too, a code was found by datamining the game rather than solving it as intended.

"It was really difficult to balance it as too easy or too hard," Pype says. "It was either too easy that they solved it in an hour, or it was too hard that they didn't solve it and datamined everything. I feel like that's definitely a big problem with ARGs, just getting the difficulty right." The finale of *No Players Online* takes place in a hidden developer room, where you have to enter the right number to makes the credits roll.

The final step of the ARG involved figuring out

coordinates that, when entered onto Google Maps, gave you the location of a forest in Belgium. Someone actually travelled there in person, and then found a strange poem written on a piece of paper. *No Players Online's* premise was

already great, but this extremely detailed metagame, and the sheer amount of effort people went to to uncover the truth behind it, makes it a bit mythical.

I ask the developers why they reckon it resonated as much as it did. "I think it really captured people's imaginations because it's something you can keep talking about," Pype says. "It's a real community event. But the game itself, what's really interesting for us about the initial reception of the game, is seeing people who could relate to being alone on a server. I think we tapped into this very specific nostalgia that a lot of people have." ■

Samuel Roberts

AN ENTIRE COMMUNITY FORMED AROUND SOLVING THE GAME'S MANY MYSTERIES

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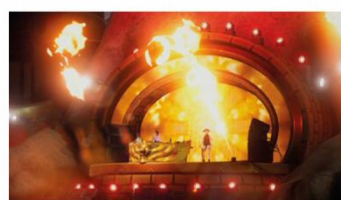


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NEED TO KNOW

RELEASE
2020DEVELOPER
HarmonixPUBLISHER
NCSOFTLINK
fuser.com

FUSER

Harmonix still feels
the rhythm

Seasons don't fear the reaper. Nor do the wind, the sun, or the rain." It's a song I've heard a million times – but never like this. The classic Blue Oyster Cult chorus floats above the downtempo drumbeat from Post Malone's 'Better Now', the synth pads from J Balvin and Willy William's 'Mi Gente', and a light piano flourish from Lady Gaga's 'Born This Way'.

The result is haunting, a chillhop medley that sends goosebumps up your spine. Then it's over, or rather ruined, as Blue Oyster Cult's poetic ode to everlasting love is interrupted by the opening synth from 'Party Rock Anthem', and everyone in the room winces and then starts laughing.

Harmonix is revealing its new game, *Fuser* and it's a hell of a lot of fun. I knew that as soon as I walked in to my demo – because I'd already played it. Well, sort of. The game I played was called *DropMix*, and Harmonix released it in 2017. It was a collectible card game that required a physical board, mobile app, and some kind of external speaker to play, on top of booster packs.

"*Fuser's* got a lot in common with *DropMix* from a mechanical standpoint. It's got none of the headaches *DropMix* came with, having cards and boards and all that," says Harmonix's Daniel Sussman. Harmonix made a fantastic game in *DropMix*, the problem was nobody could find it. The required RFID-reading base station was difficult to find, and the packs of cards were even more scarce.

Point being, if you were one of the lucky few who played *DropMix* then *Fuser* will seem very familiar. It's built around the same ideas and the same tech.

DECK BUILDING

For those who weren't so lucky: *Fuser* is essentially a DJ simulation. You play by

building mashups on the fly from a catalogue of seemingly unrelated songs, silently praying that the end result is magical and not simply a mess.

There are four turntables across the bottom of the screen. They're colour-coded (to match the Xbox face buttons), and ostensibly tied to one of four categories. There's one turntable for drums, one for bass or background piano/synth, a third for lead instruments like guitars and more aggressive synth melodies, and the last for vocals.

Every song in *Fuser's* 100-song tracklist is split out into these same four components, allowing you to mix-and-match. So you can take the drums from one song, say The Clash's 'Rock the Casbah', and pair it with the vocals from another, like 50 Cent's 'In Da Club'. Layer in the guitar from 'All-Star' by Smash Mouth and you have an unholy creation that will haunt your nightmares.

It's a surprisingly harmonious nightmare though, because Harmonix built out some amazing tech for, firstly, *DropMix* and now *Fuser*. There's a lot going on behind the scenes. *Fuser* first needs to sync all four tracks to the same tempo, a practice known as beatmatching. But that's the (comparatively) easy part. *Fuser* also needs to make sure all four tracks are in the same key. That's simple enough when pitch-shifting from one major key to another, but *Fuser* also needs to contend with changing tracks from major to minor keys, and vice versa.

Having spent a lot of time making music in Ableton over the years, it's difficult to overstate just how impressed I am with Harmonix's underlying tech. It's what drew me to *DropMix* in the first place, and *Fuser* both refines and expands the player's toolset. Dig past the press-a-button-play-a-track surface level and you can adjust pitch or speed up and slow down playback, or even see where 'interesting' parts of a song start before you press play – if, say, you want to switch tracks as the chorus kicks off.

PLAYED
IT

**IT'S DIFFICULT TO OVERSTATE
JUST HOW IMPRESSED I AM
WITH HARMONIX'S TECH**

Fuser



➤ It's a music sandbox with a game draped around it. *Fuser* keeps the familiar five-star ratings from *Rock Band*, but points are a bit more ambiguous than just hitting the right note at the right time. Here, your audience satisfaction is a measure of 'Freshness'. If a track is on the decks too long, the crowd gets impatient. You're encouraged to constantly switch it up to keep the masses appeased.

PICK AND MIX

Fuser also provides opportunities for extra points, which conveniently double as ways to nudge the player in new directions. You'll take dynamically generated audience requests on a regular basis, like "Play more '90s music" and "I want to hear some rock". There are also broader skill-based tasks, like dropping discs on the downbeat or soloing a specific track.

And maybe some people will get really into score chasing. Harmonix has definitely tried to accommodate those players, the ones looking for a more traditional videogame out of *Fuser*.

As Sussman tells me, "We've spent a lot of time thinking about what 'skill' in a game like this really means. It's not just about satisfying the requests. The real difference between a good *Fuser* player and a bad *Fuser* player is your ability to operate with intent – not just do everything the game's asking you to do, but to do it in a way where you're happy with what you're hearing."

That's where I landed after my hands-on time. Forget scores. *Fuser's* about the flow state, the point where you get lost in the game and your own musical instincts. It's surprisingly easy to do here.

Earlier I mentioned that each of *Fuser's* four turntables is 'ostensibly' linked to one of the four stem categories: drums, bass, melody and vocals. That's actually an oversimplification. Selecting a song and tapping one of the four face buttons will instantly swap the corresponding part onto the designated turntable, but holding the button down lets you control where each disc lands, allowing you to place two drum parts and two synths, or three pianos and a vocal track, and so on.

If I did my math correctly, there are something like 25 billion combinations you

can make with the core 100-song tracklist. A lot of those are probably terrible. For instance, you can layer four different vocal tracks on top of each other for an instantaneous headache. Every so often you strike gold though, and you get chillhop 'Don't Fear the Reaper' or a dance-ready 'Rock the Casbah' in a major key, or 'Old Town Road' except Lizzo interjects with "Feelin' good as hell" every few seconds. And that's before we get into pitch-shifting, changing the tempo, swapping back and forth between two discs on-the-fly, and all of the more advanced features that make *Fuser* more than simply a digitised *DropMix*.

RIGHT STUFF

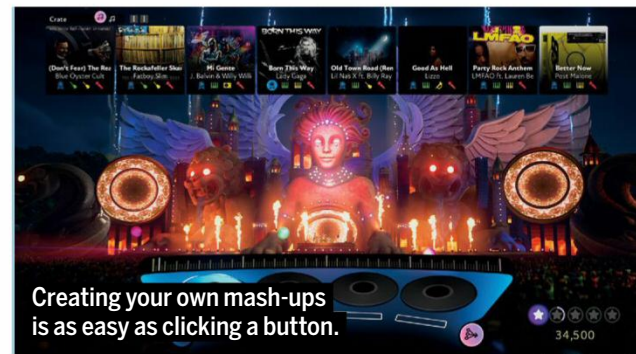
There's a lot going on, and I found myself wishing I had a mouse to do it with during the demo. Harmonix did confirm *Fuser* will support mouse and keyboard, though it's ironing out the specifics. Still, when I ask about it Sussman says, "I think the PC audience is going to be really interesting to watch. I expect them to be a different breed from console gamers for a game like this." Playing to our egos he may be, but I do think a mouse's precision and speed will come in handy.

A simulator this robust also begs for an audience, and luckily Harmonix is thinking ahead on that front. Asked about copyright regulations with Twitch and YouTube – always a thorny topic – Sussman says, "We pitched *Fuser* to [musicians] as a super social game where players have the creative agency to make something and share it with the world through social and everything. The hitch is not on the music side. It's on the platform side. We're working directly with the platforms to make sure that everything is handled in a way that's cool with the rights holders, but it's complicated."

That's not exactly an all-clear, but hopefully *Fuser* facilitates a channel full of bedroom DJs when it releases. "The Harmonix ethos is converting music lovers into musicians," says Sussman. "We want to present this creative musical experience to people that – they love music, right? And they love games, but they don't necessarily know they harbour a fantasy to be a songwriter."

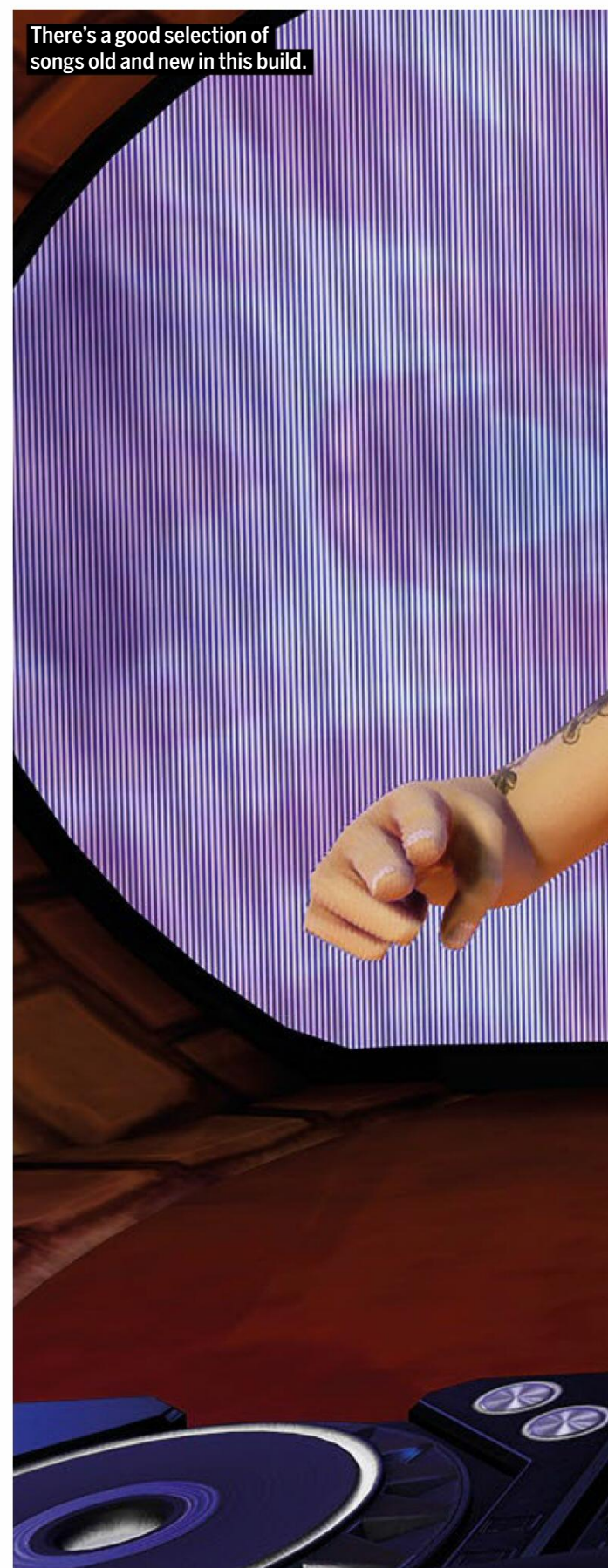
I can't wait to hear what people create. *Fuser* is due out in 2020, though Harmonix didn't specify a date nor give any details about storefronts yet. Hopefully you have a copy of *DropMix* to tide you over until then.

Hayden Dingman

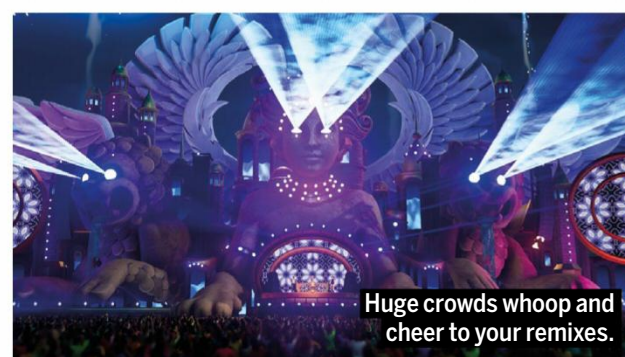
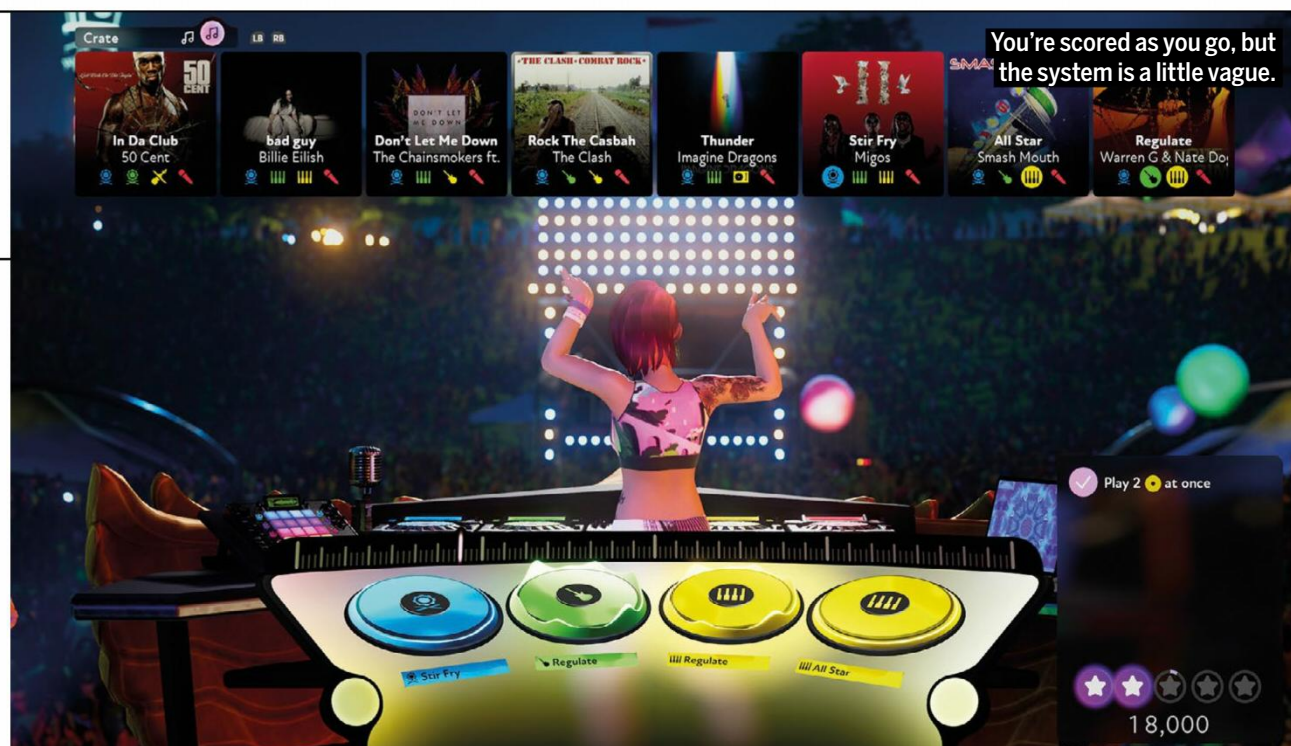


Creating your own mash-ups is as easy as clicking a button.

There's a good selection of songs old and new in this build.



YOU'RE ENCOURAGED TO CONSTANTLY SWITCH IT UP TO KEEP THE MASSES APPEASED





Gears Tactics has more of a story than you might expect.

NEED TO KNOW

RELEASE
April 28

DEVELOPER
The Coalition, Splash Damage

PUBLISHER
Xbox Game Studios

LINK
gearstactics.com

GEARS TACTICS

XCOM with *Gears* machismo makes for fast, aggressive strategy

It seems like *Gears Tactics* knows that I could just sit behind cover, with overwatch activated, waiting for the Locust troops to stumble into my line of fire. Patience is a virtue, right? The problem with that proverb is it doesn't account for sawing a bad guy in half with a chainsaw gun.

Even in the context of an *XCOM*-inspired strategy game, chainsawing baddies in a shower of ludicrous gore is still the good stuff. *Gears of Wars'* defining executions are also the key to the tactical combat, which pushes you to be aggressive in the face of enemy hordes. After mortally wounding an enemy, you can get close and execute them with a pistol smash to the head or a chainsaw vivisection, and that bit of ultraviolence psyches up the rest of your squad so much, they each earn an extra action point on the spot.

For the first hour of *Gears Tactics*, I mainly popped a soldier out of cover for the occasional execution when it felt safe. An extra action point was a sweet bonus, but *Gears* is already a faster-paced strategy game than *XCOM*. Instead of a soldier being limited to one move and one attack per turn, each Gear gets three actions of your choice. Staying put and firing three times is fair game. Once I started having to deal with emergence holes barfing up piles of more enemies behind my cover, though, I realised those three action points just wouldn't be enough. I was going to have to get into the

PLAYED IT

execution business and meet these enemies head-on.

CHAIN REACTION

Like other great strategy mechanics, chaining executions engages that part of my brain that loves to optimise. It reminds me of starting every round of *Into the Breach* thinking, "How the hell am I going to get out of this one?" In one fight I accidentally got one Gear surrounded by enemies. It took most all my actions to thin the herd and revive him. With him on his feet, I was able to execute a nearby grunt, which turned out to be clutch, because I immediately put him back on his knees by trying to bayonet an enemy with a nasty counter move. Without the bonus action for the rest of the squad, no one would've had a point left to revive him a second time. It's a clever idea that makes *Gears Tactics* feel more like its shooter source material than I expected.

I never felt like I was just playing *XCOM* with a *Gears* skin. *Gears Tactics* does away with a lot of *XCOM*'s high-level complexity, like base-building and resource management, to focus more on a narrative campaign and a cool equipment upgrade system. Each Gear class's weapon can be upgraded to hold more rounds, up accuracy and crit damage, and so on.

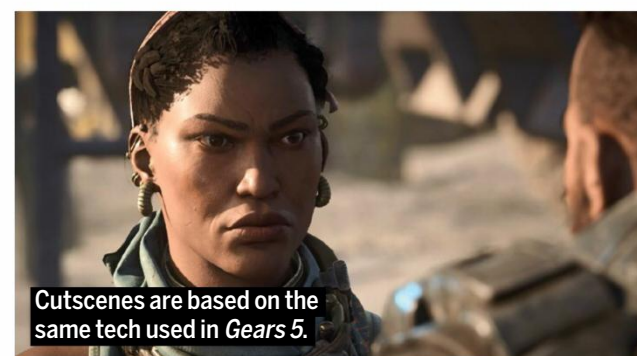
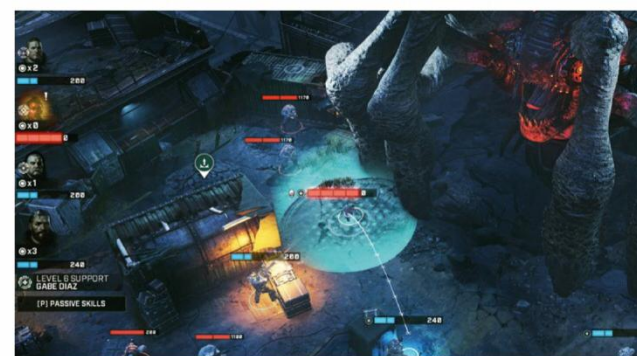
The parts for those upgrades are scattered around mission maps, but you can also earn even better ones from completing bonus objectives.

The classes (support, vanguard, heavy, scout, sniper) use an open-ended skill tree with four specialities, but you'll only be able to max out about two paths for a soldier (if you keep them alive long enough). With my scout, I was immediately eyeing skills from two separate trees that would work well together: one gave her a dash ability to move further in a straight line, while another gave me a free action point when using her cloak ability to turn invisible.

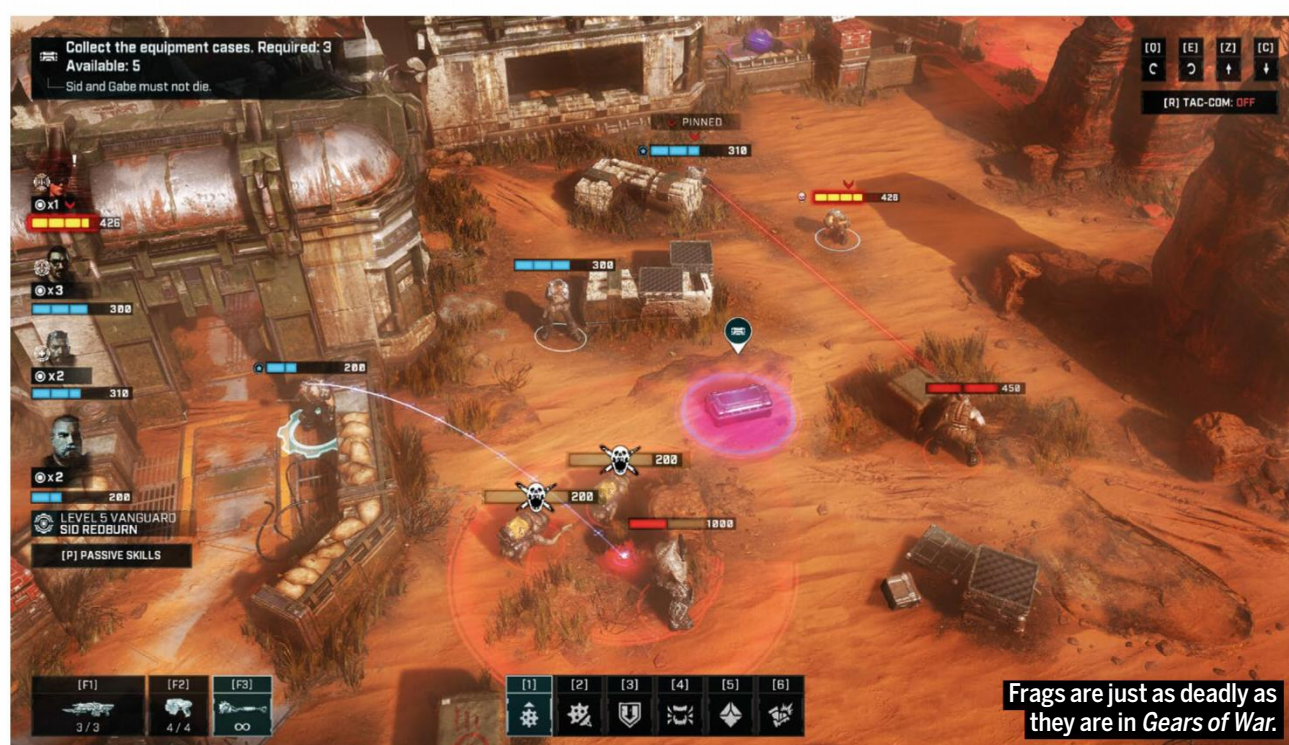
I like the balance *Gears Tactics* strikes. It's not as overwhelming as *XCOM 2* and lacks the sandbox potential to get lost in for hundreds of hours. Instead it has cutscenes and big setpiece boss battles, faster (and grid-free!) combat, and chainsaw guns. Turns out, that's plenty.

Wes Fenlon

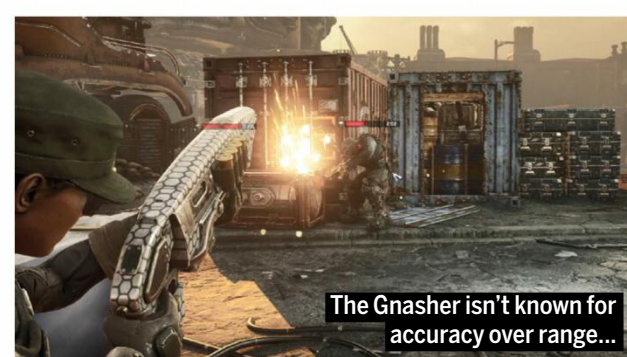
GEARS IS ALREADY A FASTER-PACED STRATEGY GAME THAN XCOM



Cutscenes are based on the same tech used in *Gears 5*.



Frag is just as deadly as they are in *Gears of War*.



The Gnasher isn't known for accuracy over range...



PREVIEW

Hardspace: Shipbreaker



NEED TO KNOW

RELEASE
Summer

DEVELOPER
Blackbird Interactive

PUBLISHER
Focus Home Interactive

LINK
blackbirdinteractive.com

HARDSPACE: SHIPBREAKER

Cut it, strip it, cash out...
and don't die

In space, no one can hear you complaining about workplace safety practices. *Hardspace: Shipbreaker* puts you in the blue collar spacesuit of a humble worker tasked with breaking down decommissioned starships – and trying not to blow himself up in the process.

After neglecting to read the fine print of your contract, you find yourself heavily in debt to the LYNX Company – heavily as in to the tune of a billion credits. Working that off means keeping an eye out for and skilfully salvaging valuable parts such as reactors and fuel rods, using your handy cutting tool and grapple hook.

During my hands-on, I find myself thinking of the ships like great floating onions. Success comes in finding creative ways to peel back each layer, snatching up the best bits within each one. There's an oddly zen quality to it as I meticulously dismantle these huge metal beasts. Well, at least it's zen until I hit a fuel line, and before I know it half the ship's exploded and my profits are floating out into space. Slicing and dicing ships for cash is pretty dangerous work, as it turns out.

The game is heading to Early Access later this year, and should boast plenty of variety by then – in addition to a sandbox mode that randomly generates new ships, there'll be mod support allowing players to design new ones. And probably also put Macho Man Randy Savage's face on a planet or something.

Jorge Jimenez

I FIND MYSELF THINKING OF THE SHIPS LIKE GREAT FLOATING ONIONS

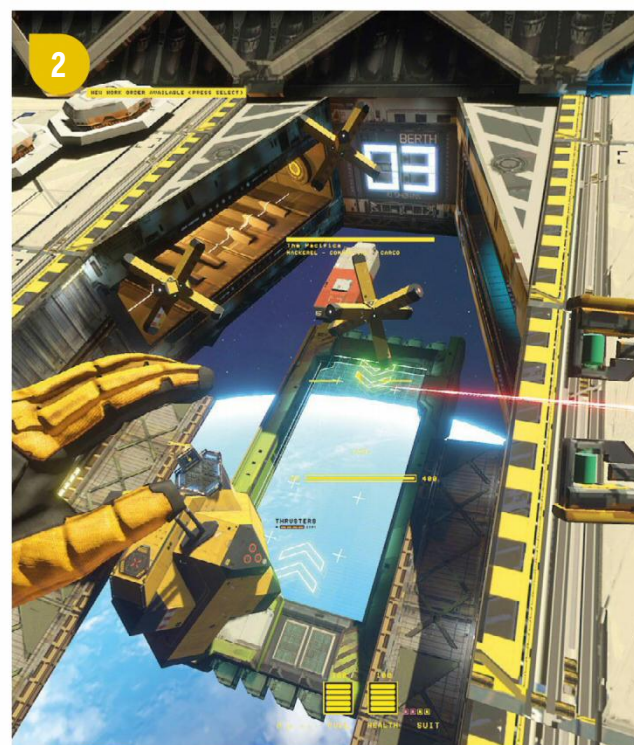
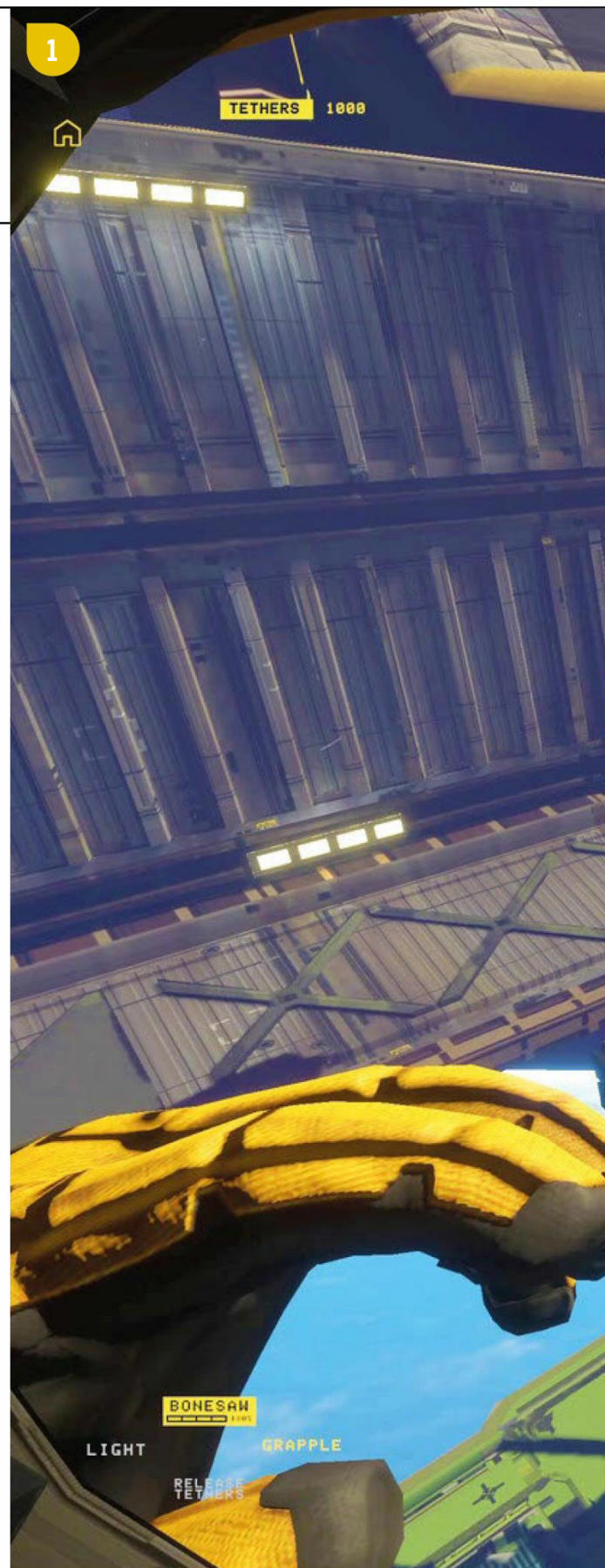
1 You see a dead ship, I see a floating payday. Each one holds valuable resources you can use to pay off your ridiculous debt. Unlock certifications that give you access to bigger, fancier ships along with new tools that make your work a little easier. Just know that LYNX Corp will be nickel and diming you every step of the way.

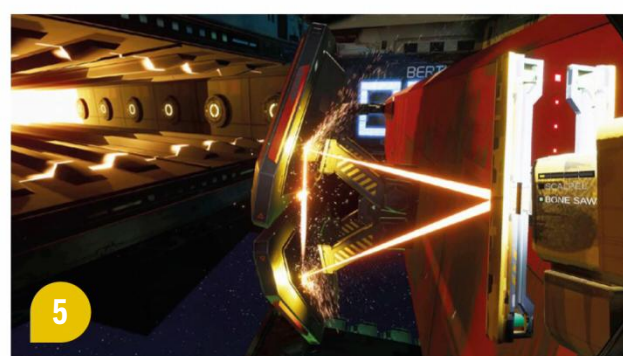
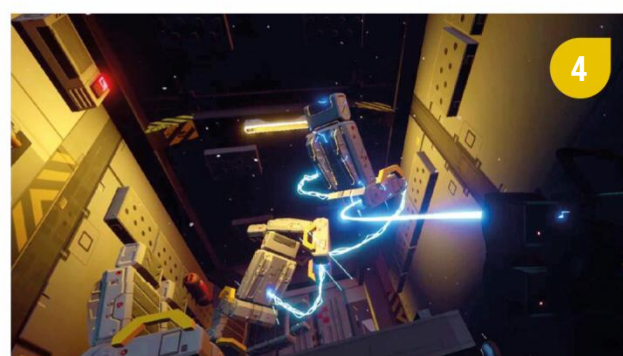
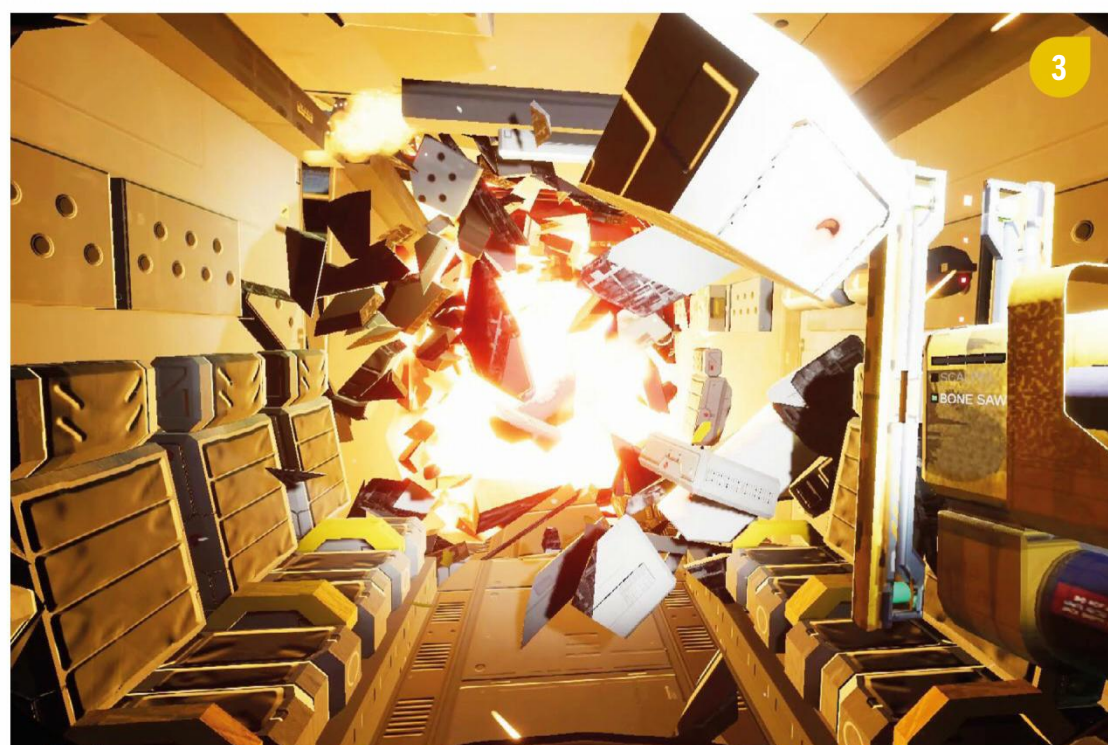
2 You need to use every part of a ship to turn a profit. There are three salvage depositories: a processor for heavy metals like ship panels, a furnace for junk and soft metals, and a barge for high-value components like a ship's reactor core. Just make sure everything is deposited in one piece or the value of your salvage will drop.

3 No one said stripping down ships would be safe. One errant cut could catch a fuel line and you'll quickly find out that the company did not pay for a flame-retardant space suit. Don't fret though, even if you get vaporised when a reactor goes critical, LYNX Corp has your DNA on file and can deploy a clone of you to resume work.

4 Your space grapple is how you'll lug around these huge parts. You can even tether all the scrap together in a daisy chain of volatile loot, to cut down on trips back and forth. Advanced players can do clever things using the tether/grapple combo to rip components from hard to reach places.

5 When cutting, don't forget that the laws of physics do apply here. Loose panels can be given a little shove to build momentum. Pro-tip: Make sure you depressurise rooms before you start lasering on the side of a ship or prepare to get hit by the debris that'll shoot out at often fatal speeds. Death by space junk: not a great way to go.





This is a boss disc. It's in charge of other discs.

TIME
0:08.000

NEED TO KNOW

RELEASE
2020

DEVELOPER
Terri, Dose, Kitty, and JW

PUBLISHER
Devolver Digital

LINK
bit.ly/38RZKdJ

DISC ROOM

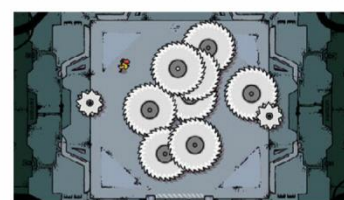
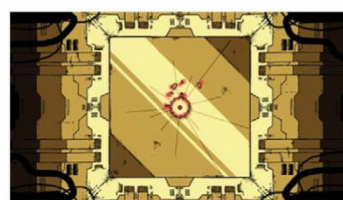
A challenging game – but it wants you to succeed

It's the distant future and a massive saw blade has appeared in the orbit of Jupiter. You're a little cartoon space guy, a scientist sent to investigate. What's waiting for you? Discs, discs with serrated teeth, and they're bouncing all over. Your mission: survive. (Let's get Ridley on the screenplay, ASAP.)

PLAYED IT

Who knew that a game about trying to run through sawblade hurricanes would also be the most relaxing game I've played in a while? The premise of *Disc Room* doesn't need much explanation. Rooms. Discs. Avoid the latter. But the way *Disc Room* makes me feel – like nothing else matters, laser focused and yet calm – does need some sort of explanation.

Disc Room avoids unnecessary complexity in favour of accessibility. The thing is a breeze to control, removing shooting from the twin-stick shooter template and focusing singularly on movement. In fact, in the early levels, you'll



only ever need to worry about a single joystick. Move your guy, avoid the discs – a breezy runway to mastery.

Removing a variable and doubling down on something so simple turns *Disc Room* from rubbing your belly and patting your head to just rubbing your belly with extreme precision. There's next to no barrier for entry here. A dash gets added to the mix later on, but it functions as a support tool, an extra bit of juice to squeeze through a bundle of discs whose speed and pattern I may have miscalculated. It's like a get out of jail free card with a cooldown, something that props up the player, not something that takes my brain in a different direction and asks me to juggle. It's all about the movement, baby...

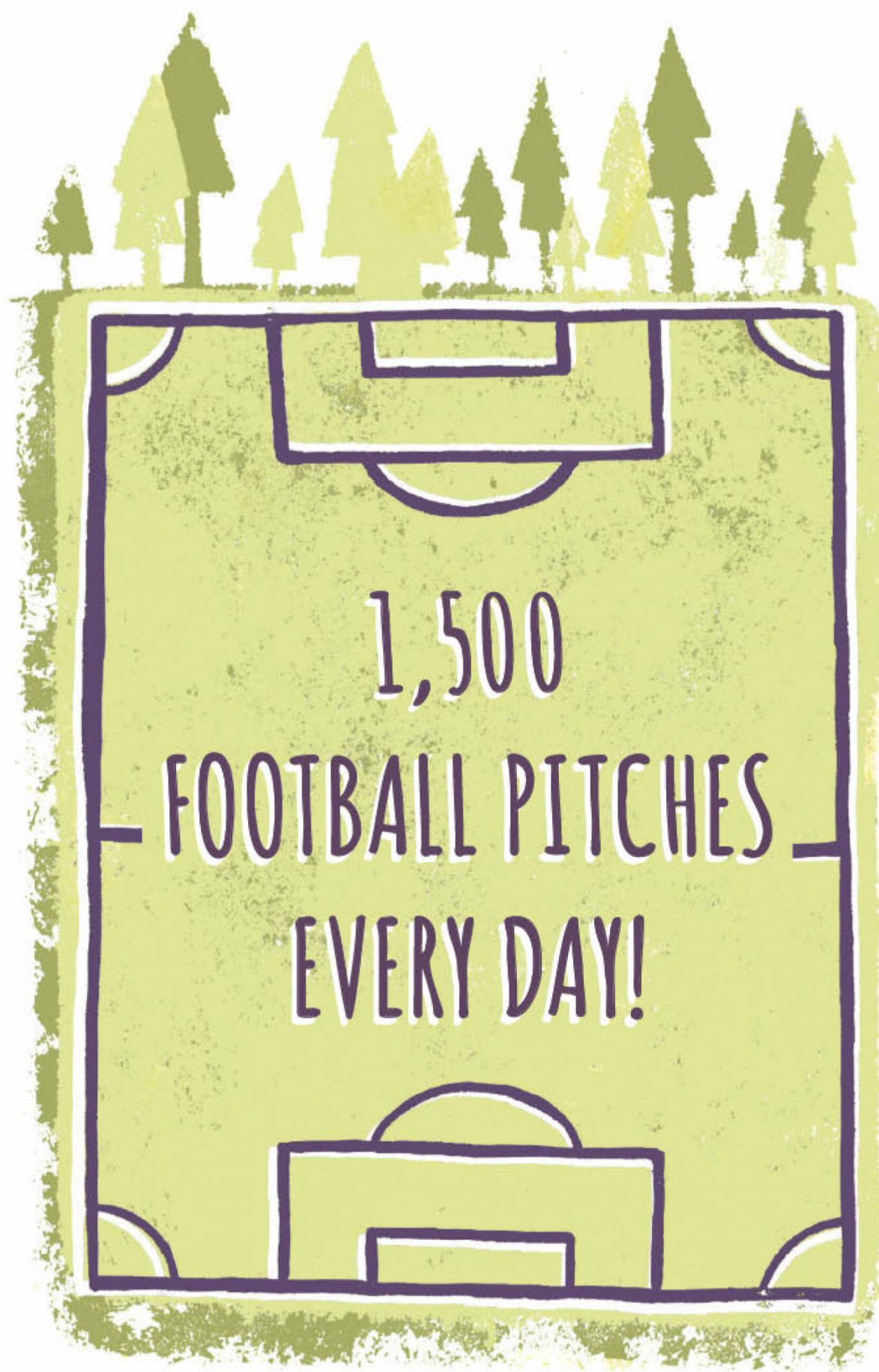
DISC ROOM AVOIDS COMPLEXITY IN FAVOUR OF ACCESSIBILITY

SPIN TO WIN

Disc Room's complexity is layered on the disc side, not the player side. Discs begin as basic spinning saw blades. Then the sawblades multiply and explode, some grow tails and bounce around the room like a logo in a DVD screensaver. There are even boss discs with unique behaviours – and yet, it's still all about dancing around increasingly complex disc patterns. Death is still a near guarantee, softened with a *Pokémon*-like get-killed-by-'em-all system. Death from each disc type adds them to a collection, encouraging familiarity with each disc while giving your brain a little high-five for 'screwing up'.

This gradual introduction to each disc type makes some of the later rooms with wild disc combos a breeze, surprisingly. That's the design encouraging mastery through observation rather than pure trial and error. *Disc Room* is the kind working class parent of difficult arcade games, not the mad football dad who thinks concussions are based on bunk science. I love my difficult games, but only when they love me back.

James Davenport



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UNFAO, Global Forest Resources Assessment 2005-2015

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Raji: An Ancient Epic

NEED TO KNOW

RELEASE
2020

DEVELOPER
Nodding Heads Games

PUBLISHER
Super.com

LINK
raji.thegame.com

RAJI: AN ANCIENT EPIC

What if *God of War*, but India?

I'm a right sucker for games that dip into real world history and mythology. I should just read some books, but a historical taster filtered through wild combat scenarios and action scenes doesn't get old. Those lush, surreal *God-of-War*-esque backdrops are what the oral tradition was aiming for with all those myths anyway.

Raji is set in ancient India, thousands of years after a major war in which the demons rose to take down the gods that tossed them into the underworld. By this time, humans have become lazy and incompetent and greedy, having forgotten the important art of alchemy, now indifferent to the deities that governed their past. In short: humans did the human thing, and now the demons have returned in order to kill them all.

These aren't storebrand gods and demons though. *Raji* weaves in ancient Indian myths, using iconic figures and settings to tell its story, though it doesn't adhere to them too strictly. And as Raji, you're the sole warrior chosen by these gods to repel the demon hordes. Just one warrior, gods? Really?

No worries. Raji's down to clown – her brother was taken by the demons and seeing him to safety is more than enough for her to go to hell and back.

In my hands-on demo, the art hits me first and the camera work follows up with a right hook. *Raji* is a gorgeous game, every scene like a carefully composed

painting. Misty mountains rise up in the background, the cloud layer perforated by palace spires. I walk into the mouth of a massive statue, gliding up the tongue of a wild-eyed beast whose insides lead to a temple adorned with fountains and waterfalls, intricate mosaics and statuary depict spiritual figures I'm likely to bump into or hear from on my journey.

DIVINE INSPIRATION

The gods actually narrate Raji's adventure, watching and commenting from afar to check in on their chosen saviour. It's a nice touch, imbuing these unseen but much talked about forces with personality and motive. Their bird's-eye perspective is mirrored by the elegant camera, which follows Raji from above, swooping in to tighten the frame around an intense fight or far out and above the entire scene to reinforce the scale of the world and the overbearing odds set against Raji. She looks like an ant down there.

The *God of War* comparisons are inevitable, and reductive I know, but where *Raji* differs from Kratos the most is in how she fights. She's a young woman decked out with a dress and a staff. She's incredibly fragile, not the Spartan wall of meat demons and gods alike have been hacking away at for over a decade. But she makes up for it in

agility. Combat is defined by surveying the field, finding a gap in enemy animations, and swooping in for a quick combo. She can only take a couple of hits before death, so getting out of the fray is just as important. She can flip in and out over great distances, run up walls and leap away (or into an attack), and use bits of the environment like columns to climb away or swing around to change position and direction instantly. It takes a minute to adjust from my aggressive button mashing instincts, but when it clicks, the combat settles into a cozy rhythm.

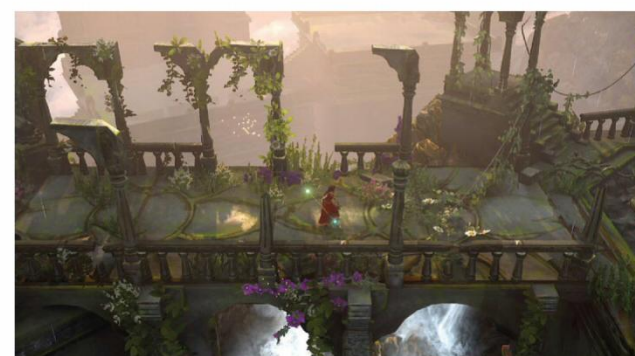
Raji feels good and looks amazing, so the real test will be in how the puzzles, narrative, combat and exploration articulate over the span of the game. It'd be a real shame if art and animation that is this excellent were wasted on a one-note adventure with no substance, but, I don't know, if it stays this pretty throughout, I might be happy either way.

James Davenport

PLAYED IT



Raji is full of good views.

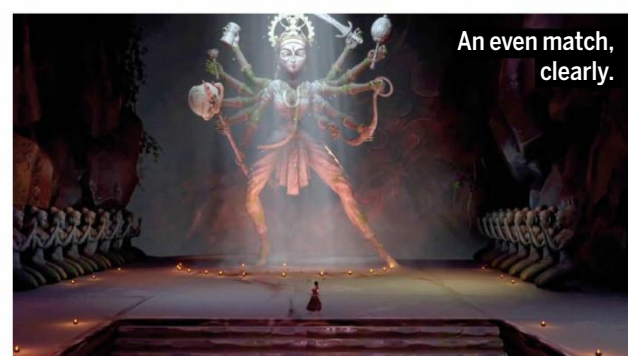


YOU'RE THE SOLE WARRIOR CHOSEN BY THE GODS TO REPEL THE DEMON HORDES

Raji: An Ancient Epic



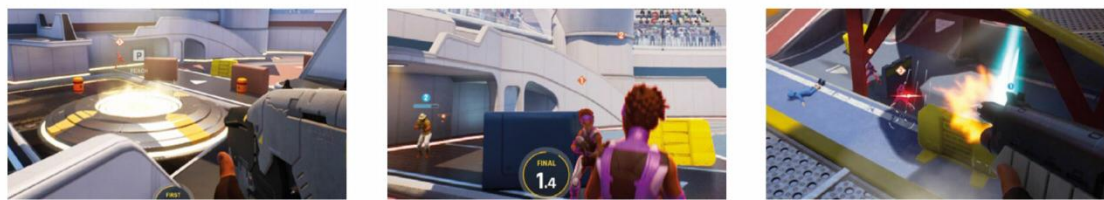
Concept art hints at some wild locations.



An even match, clearly.



Quantum League



NEED TO KNOW

RELEASE TBC	DEVELOPER Nimble Giant Entertainment	PUBLISHER In-house	LINK quantum-league.com
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QUANTUM LEAGUE

Every time you die, you'll be beside yourself

We've all been there. Playing an FPS online, planning some harmless violence, when bam! You're killed by an unseen sniper. If only there was a way to go back in time, aware of your opponent's location and actions, to turn the tables. Well, now there is.

Probably the easiest (and least exciting) way to explain the basic premise of *Quantum League*, is in terms of bots. You play for 18 seconds, then you're returned to the starting point. You then play for another 18 seconds, this time alongside a bot which repeats your previous actions. You're then returned to the starting point again, to play for a final 18 seconds, now alongside two bots (one repeating your actions from the first turn, one repeating your actions from the second). Still with me? Good – because it gets a lot more complicated.

Before I get to the stuff with the potential to wring your brain like a dishcloth full of hot takes, I'll warm up with the straightforward elements. In the beta version I play, there are just three maps and two game modes. As there will only ever be two or four human players in a match (1v1 or 2v2 is available), the maps are tiny. The game modes are essentially deathmatch and king of the hill under different names, and therefore immediately easy to understand.

I'm surprised to find just five weapons to choose from, but this is more than enough variety. If I choose to cower behind cover until the last few seconds

PLAYED IT

when capturing a point, I'll carry a shotgun for close encounters; for taking people out at a distance, I'll take the laser or rifle. If I'm unsure of my opponent's tactics, SMG all the way (plus, in a nod to more traditional FPS elements, I always have a pistol in reserve). The grenade launcher, meanwhile, is what I spitefully use on the final turn if I don't feel I have a chance of winning. There's no better combo than vindictiveness and explosives.

CLONE RANGER

If you encounter one too many bullets to the face and die, you are not only advised, but *encouraged* to keep on playing. Upon death, you become a ghost invisible to your opponent, and each arena has a few revive orbs scattered about to get you back into the game. However, these are not the only reason you're encouraged to keep going after death. They're not even the main reason.

While dead (or as the game has it, in 'desync'), you are not only advised, but *encouraged* to keep on playing. In one deathmatch, while in invisible and harmless ghost form, I nab a revive orb and resurrect. This allows me to avenge myself, killing my would-be assassin from behind. I laugh out loud when, moments later, the words "Wait, what" appear in the chat.

In another match, I make it to the capture point before time runs out – but I am by this point in a state of desync. On the next turn, I kill the enemy bot before it has a chance to kill my own, and so my team scores. *Quantum League* is crammed full of hugely satisfying ways to turn the tables like this.

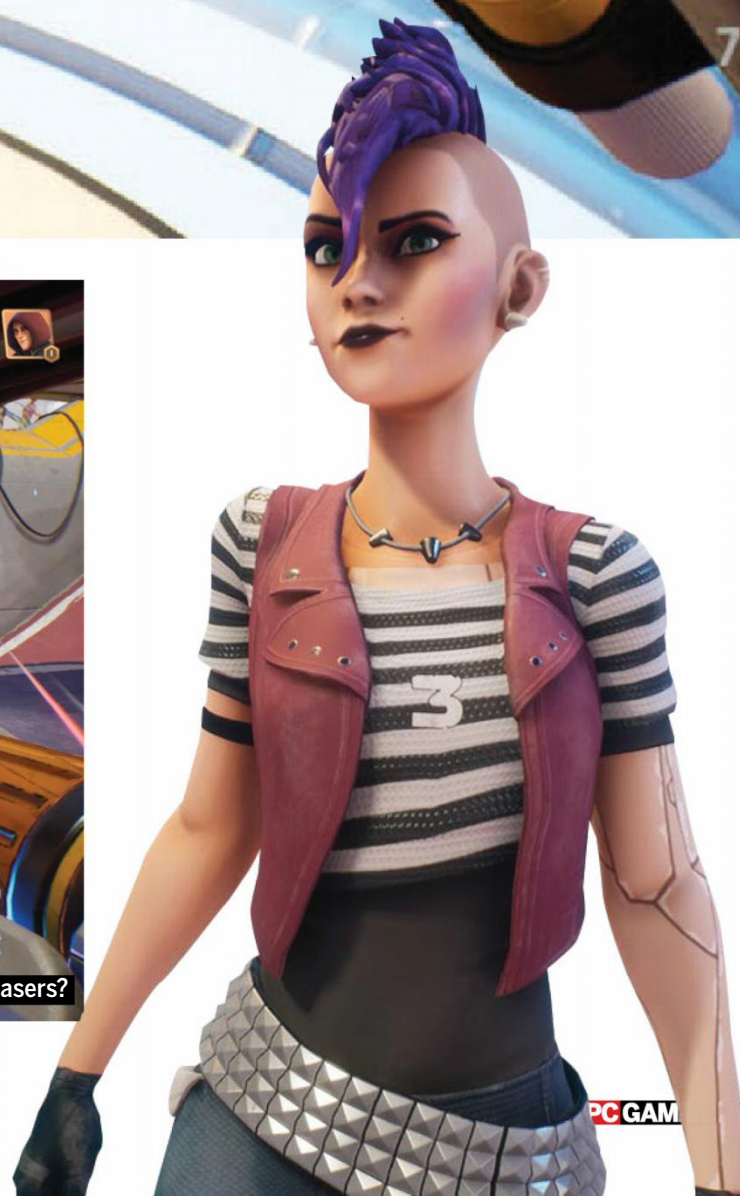
I'm forced to think in increasingly complex ways as the round goes on. During my first turn in a capture match, I know rushing to the point is unwise, as if I die in the first few seconds that won't leave me enough time to save myself in the next turn. If I die or score, I need to be aware of the enemy's actions in the next turn. What would I do in that situation?

This is all much easier to understand in play than it is to explain. The clone and time paradox mechanics force you to think, plan and react in a way that feels completely brand new to shooters. All three of me love it.

Luke Kemp

I'M FORCED TO THINK IN INCREASINGLY COMPLEX WAYS AS THE ROUND GOES ON





NEED TO KNOW

RELEASE
2020DEVELOPER
PhigamesPUBLISHER
Dear VillagersLINK
dearvillagers.com

RECOMPILE

Hacking is a way of life in the Mainframe

T

his striking adventure casts you as a rogue virus fighting to avoid deletion in the ruins of a digital world. Its low-poly art style and neon flair brings the visually arresting world of 'Mainframe' to life – a setting on the brink of disaster as it approaches an AI singularity.

Structurally it feels like a mix of metroidvania and immersive sim, encouraging you to explore and offering rather more ways to deal with obstacles than just shooting them to bits. The malfunctioning subroutines standing in your way can be fought, but it's also possible to hack your way around them, subverting interconnected functions in the

environment to your ends. With enough command of machine logic, you can mess with everything from the doors, to power lines, to even the enemies themselves and the devices that spawn them.

The dev cites genre inspirations as revered as *Axiom Verge*, *Hollow Knight*, and *Ori and the Blind Forest*, but *Recompile* hopes to mark itself out from its predecessors with the addition of a branching narrative that twists and changes based on how you play. Whether you choose to scrap with foes directly, mess with their programming, or whatever other means you can find to bypass them, you will affect how the surreal sci-fi story plays out over the course of the game.

Jorge Jimenez

FIRST
LOOK

TIME TO STEP OFF THAT TREADMILL

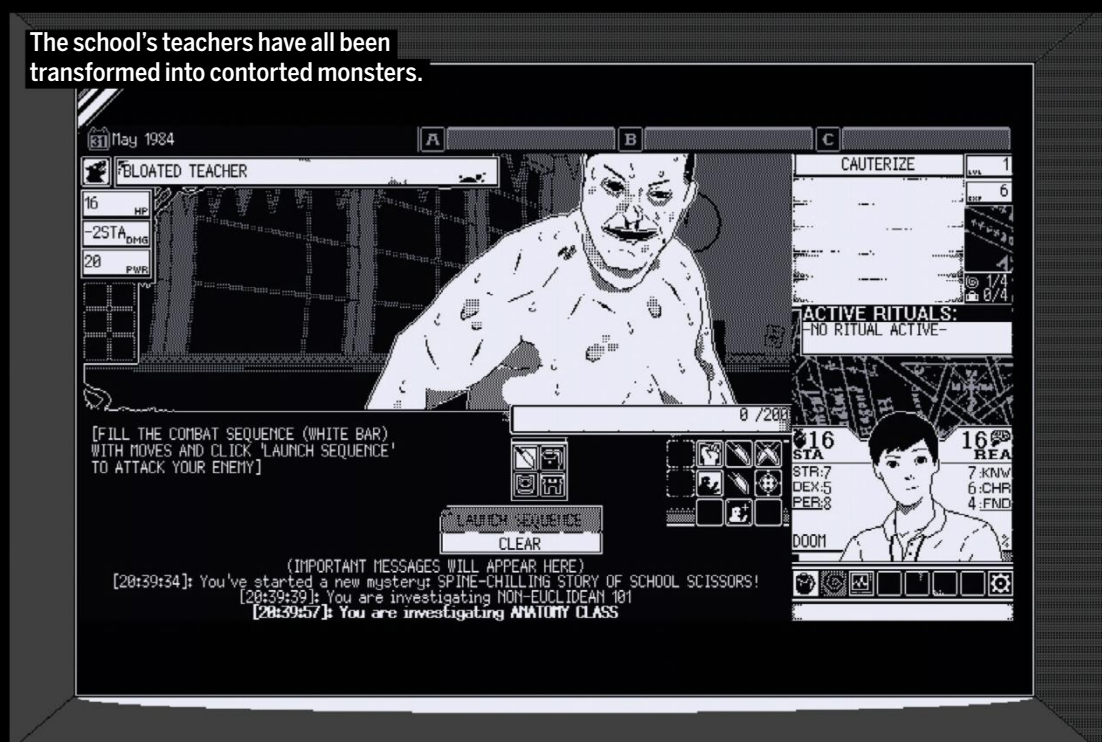
With so many demands from work, home and family, there never seem to be enough hours in the day for you. Why not press pause once in a while, curl up with your favourite magazine and put a little oasis of 'you' in your day.

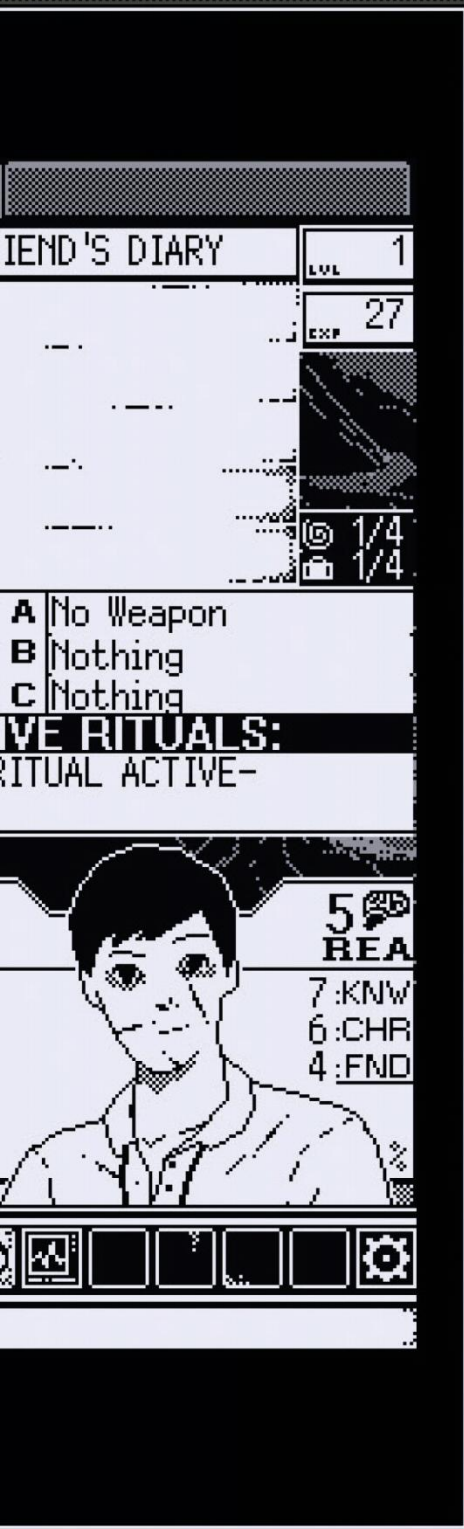


PRESS PAUSE
ENJOY A MAGAZINE MOMENT

To find out more about Press Pause, visit;
pauseyourday.co.uk

No thank you. I am not interested in your wares, sir.





NEED TO KNOW

EXPECT TO PAY
£11.40

DEVELOPER
panstasz

PUBLISHER
Ysbryd Games

LINK
wohgame.com

WORLD OF HORROR

Junji Ito-inspired encounters put you face-to-face with 1-bit horror

Crawling out from the deep depths of text adventures is *World of Horror*, an RPG that takes inspiration from the surreal horror of Junji Ito and HP Lovecraft. This 1-bit mystery anthology unfolds in a small Japanese seaside town where doom seeps into the homes of unsuspecting residents.

World of Horror has a rogue-lite structure where you must solve a handful of mysteries without meeting your bloody end by one of the many eldritch monsters. Successfully solving these mysteries will help the town heal from its inevitable doom and slowly unlocks a looming lighthouse on the outskirts of town. You play as a young teenage protagonist and challenge the forces of death by exploring, collecting objects, and battling the town's incredibly sinister beings.

The introductory mystery is centred around banishing a scissor wielding woman who is lurking in the local school. I'm playing as a teenage boy whose missing friend, who I suspect has become one of the scissor woman's victims, has left a notebook on how to force her back to her own dimension. To complete the ritual, the notebook says that I need to find blessed chalk to draw an eldritch sigil and holy candles to light it.

She's not the only one in the school, though: there's a man whose face keeps glitching, a grotesque teacher whose body is bloated from inhabiting the swimming pool, and as I pull open a classroom's

sliding door, the other side reveals a ghostly girl with long black hair who slams it back shut. Finally, when I've collected the chalk and candles, it's time to face the twisted woman. As she enters the classroom, I realise that it's the first time I've ever seen her up close, and the rumours and stories I've heard materialise into a disgusting reality.

In other horror games, the monsters keep to the shadows, building tension and terror. But with *World of Horror* when you engage in a fight with one of its many twisted monsters you fight it face-to-face, wide smile, loose skin and bulging eyes staring right at you. You get to take in every pixel and really absorb the contorted creature in front of you.

The scissor woman has three heads all piled on top of each other and her smiling mouths gape open creating a huge vertical slice as she menacingly snips her bloody scissors at me. My first instinct is to punch her in a panic, but in *World of Horror* there are smarter ways to fight.

MADE FOR ME

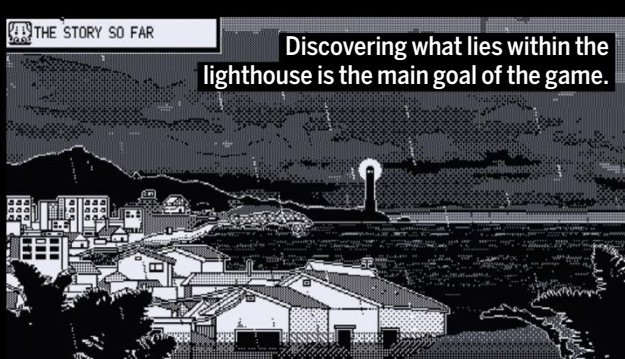
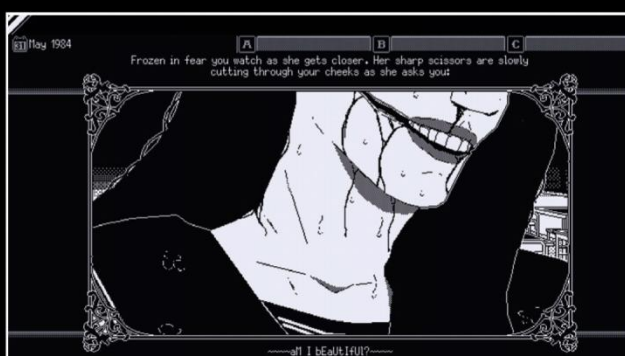
You have a range of choices from attacking, defending, dodging and casting spells. These actions can be stacked, with a bar that depletes to cap your move sets. Combat is turn-based and I luckily get to go first.

I equip a baseball bat I found earlier, hoping I won't need it if the ritual goes to plan. Your health in *World of Horror* is split into stamina and reason, with most monsters only attacking one, but since the scissor demon is much more powerful she attacks both. Turns out I needed the baseball bat after all.

After failing to figure out the correct order of claps and bows I need to do to finish the ritual, she slices me to pieces, the portrait of the teenager I'm playing getting slowly bloodier and bloodier until it's just a splatter of black.

World of Horror is a text adventure with chilling imagination. Even when mysteries repeat in different playthroughs, I feel like I have a second (third or fourth) chance of redemption. The game is currently in Steam Early Access but features more than enough harrowing stories, grotesque monsters and all-seeing ancient gods to keep you awake at night.

Rachel Watts



THE SCISSOR WOMAN HAS THREE HEADS ALL PILED ON TOP OF EACH OTHER

EARLY ACCESS PREVIEW

Urtuk: The Desolation

The hand-drawn art is just one of the highlights.





NEED TO KNOW

EXPECT TO PAY
£16

DEVELOPER
David Kaleta

PUBLISHER
David Kaleta

LINK
www.urtuk.com

URTUK: THE DESOLATION

Real-time strategy with teamwork at its heart

It's all coming together. An enemy unit has strayed just a little too close to the edge of the plateau on which we're fighting. I've had my war monk lurking just a few spaces away for a few turns, waiting for exactly this kind of opportunity.

I move him into position behind his opponent, and then instruct him to flip his victim backwards. My enemy goes flying, plummeting over the cliff to his gruesome death on the rocks below. It's not a particularly delicate solution, but it's certainly effective, and a clear example of how *Urtuk: The Desolation* forces you to use the world around you as one of its deadliest weapons.

Played out across a hex-based board, each battle pits the titular Urtuk and his band of allies against one of the many threats that haunt their world, from marauding soldiers to Lovecraftian monsters. The detailed, hand-drawn character artwork matches the grimy, unsettling worlds of games such as *Darkest Dungeon* and *Don't Starve*, but the law of gravity often feels like a far greater danger than the existential threats you face off against.

In combat, hexes are piled up to create hills, plateaus and choke points, which dictate the way in which skirmishes play out. Sometimes, it's a question of having the high ground – a unit standing above another gains an offensive and defensive advantage, dealing more damage and taking less. Elsewhere, it's used to build up

defences – classes like hunter and assassin can drop traps to dissuade enemies from passing through the gaps between the ravines, barricades, and other hazards that litter each map. On the most satisfying occasions, you can bash enemies into high walls or suplex them off tall cliffs to even the odds.

HEX CELLS

These multi-level battles can help shape your strategy. Place a ranged unit on a hill-top, and he'll be nearly untouchable. Send an assassin on a flanking route around a cliff and he can devastate unsuspecting enemies. But for every time they enhance the experience, there's another where the terrain can cause the action to grind to a halt. Single-tile choke points are surprisingly common, and with most units unable to easily move past one another, some fights degrade into all-out slug-fests between whichever two characters happen to be trapped together, everyone else relegated to watching until someone triumphs.

When the action opens out, however, your team starts to feel like a well-oiled machine. In one exchange, I use a shield bearer to dive in front of my assassin, deflecting a dangerous blow and allowing for a counter-strike. Once that hit lands, my nearby

hunter can use his ranged support skill to fire off an extra shot from several tiles away. By themselves, many characters are fairly unremarkable, but it doesn't take much effort to create a team that's a lot more than the sum of its parts, each unit just one aspect of an efficient team that's able to adapt, moment by moment, as the battle evolves. Out of combat, the gothic fantasy that provides the backdrop to the game's world allows you to develop your team, scouring the battlefield after each fight to find mutators which allow you to edit each characters' skills, granting abilities that prevent killing blows or provide extra mobility.

Both in and out of battle, there's a lot to take in, and the narrative often feels drowned out by how much more there is to consider as you wander Urtuk's world. That's a shame, as there's a lot to discover, but there's still plenty of joy to be found in flipping your enemies into the abyss.

Alistair Jones

PLAYED IT



Bloody battles dominate Urtuk's world.

WHEN THE ACTION OPENS OUT, YOUR TEAM STARTS TO FEEL LIKE A WELL-OILED MACHINE

THE **PC GAMER** **RETRO SPECIAL**

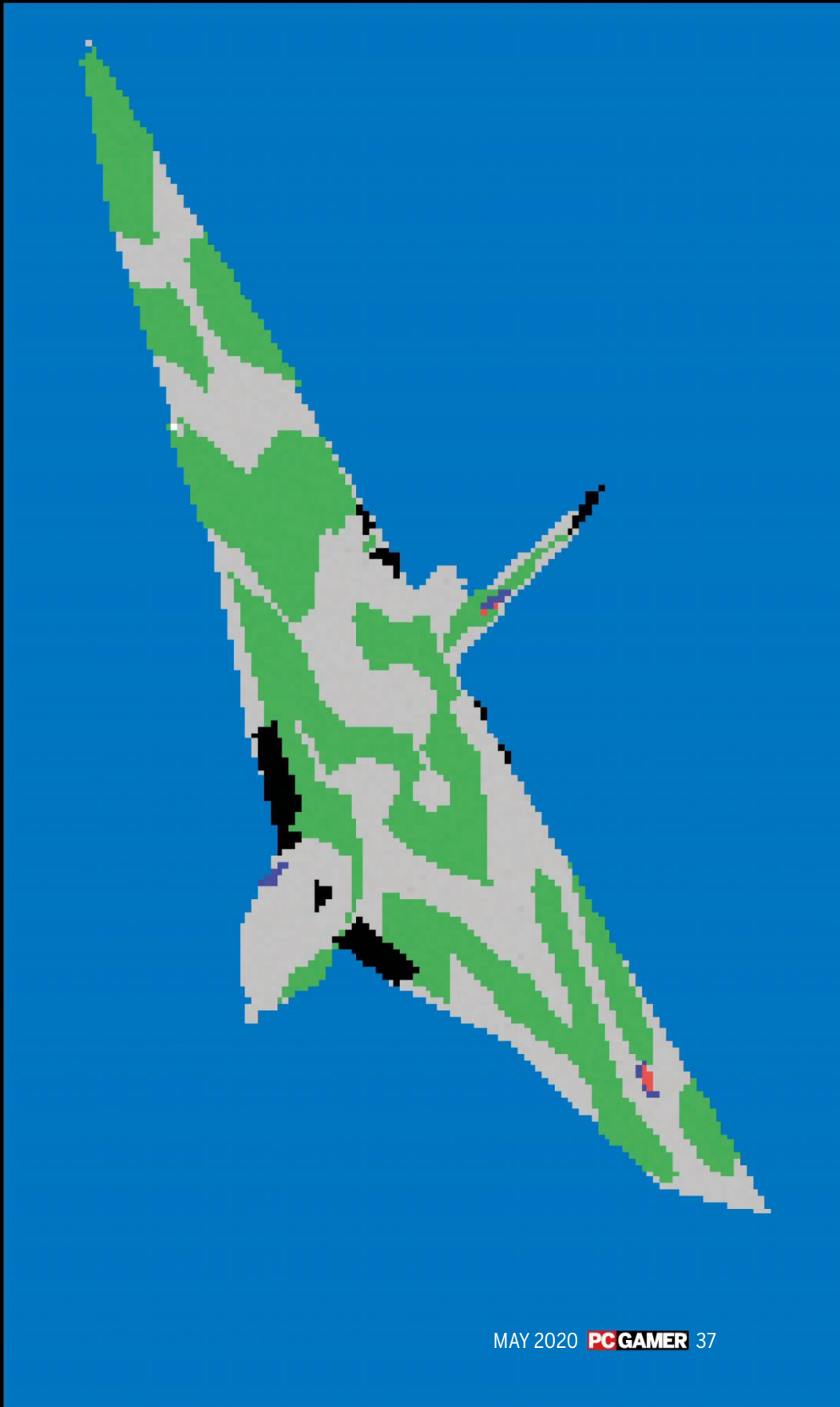
Looking back
on some of our
favourite classics
– and the ways
their influence is
still felt today

P38
DOOM

P50
**SHOGUN:
TOTAL WAR**

P46
HALF-LIFE

P52
**FLIGHT
SIMULATOR
4.0**



RETRO SPECIAL





A HISTORY OF VIOLENCE

The story of **DOOM** and how it changed everything – as told by co-creator John Romero.

By Andy Kelly



n the winter of 1993, Dallas, Texas-based developer id Software released a game

about a space marine killing demons, and a legend was born. *Doom* set the standard for the first-person shooter on PC and beyond, and was one of the first videogames to bleed into mainstream pop culture. It was critically acclaimed, technically groundbreaking, a sales success, and is still considered by a huge number of people to be one of the best games of all time.

Today, co-creator John Romero runs his own studio in Galway, Ireland. He's currently working on *Empire of Sin*, a turn-based strategy game set in Prohibition-era America. This is a far cry from *Doom*, but the landmark shooter is never far from his mind. In 2018, Romero released *SIGIL*, a brand new *Doom* episode. And his Twitter feed is a goldmine of anecdotes, rare photos, and other *Doom* ephemera. But why, when so many other games from the '90s have been forgotten, does *Doom* endure?

"It's programmed really well," says Romero, speaking from his studio in Galway. "And releasing the source code has allowed ports to keep it at a highly playable level. If you play it in DOSBox, it still feels pretty good. But it's not as smooth as it is on today's machines. I actually think it feels better playing it with a source port nowadays. There was a tipping point a while ago where people would swear you had to play the original DOS version, but now these source ports make it feel really good."

RIGHT: Romero, who has been making games since the late 1970s, hand-coded much of what makes *Doom* special.

FAR RIGHT: *Doom*'s weapons still feel great, a result of months of fine-tuning in the early stages of the game's development.



SPECIAL EDITION

Another important part of *Doom*'s magic, and the reason it still feels good to play today, is how brilliantly crunchy its weapons feel to fire. "We had a limited amount of experience putting guns in a shooter when we made *Wolfenstein*. But with *Doom*, we spent a year with those weapons. We had a lot more of them, and they were not all the same kinda thing. We had energy weapons, rockets. So we spent a lot more time focused on balancing, and the speed of weapons in relation to the player's speed, and everything else."

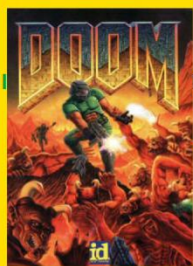
Doom's fast-paced, brutal combat made it a smash hit, but Romero and the rest of the id Software team knew long before release that they were onto something special. "We knew that before we made the game," says Romero. "We planned *Doom* for a couple of months before we started working on it. It's kinda unbelievable, but we even put out a press release saying it was going to be the best game in the world."

This press release, sent to the games media in 1993, says *Doom* will feature revolutionary programming, advanced design and faster texture-mapping than any other game – some incredibly bold claims that all turned out to be true. "It was just crazy, especially as we had just started making the game," says Romero. "But we knew, even then, that what we were going to put in the game was going to be better than anything that anyone was making at the time. So we said that. But we've never said anything like that again."

Doom is often thought of as an overnight success, but before id Software released it, the studio had already developed dozens of games



MARS ATTACKS The mainline *Doom* series so far



DOOM
1993

The game that started it all, elevating 3D first-person shooters way beyond anything that had been released before. And it's still really fun to play today.



DOOM II: HELL ON EARTH
1994

A sequel that was largely more of the same, but with bigger, more intricate levels. There was also double the number of demons to slaughter.



DOOM 3
2004

The third *Doom*, which John Romero was not involved in, had an increased focus on horror and atmosphere. It's the least *Doom*-like of the main releases, but an interesting take on the series.



DOOM
2016

In what may be one of the greatest reboots of all time, Bethesda and id Software brought *Doom* bang up-to-date in a wildly entertaining way with the simply titled *Doom*.



DOOM ETERNAL
2020

And they're doing it again with *Doom Eternal*, which doesn't just turn the *Doom* formula up to 11, but rips the knob off the speaker and then theatrically boots the speaker into a demon's face.



RETRO SPECIAL



– including several relatively primitive first-person shooters. “Before we started making it, it was our fifth first-person shooter,” says Romero. “We were a small company, but *Doom* was game 20-something.”

“We’d made a ton of games before *Doom*, and that was only in a few years. We got together in 1990, but I’d been making games since at least

1979. I had dozens of games already made. When we got together, we spent years making a lot of games together before we even started work on the *Doom* project. So we had a lot of practice both separately and together.”

It wasn’t long until word about *Doom* began to spread like wildfire, and people were somehow getting a

hold of id’s office number and asking when the game would be released. “I have no idea how that happened,” says Romero. “People had heard about it on the internet and were going crazy waiting for it to be released. That was really cool.”

“I remember the January or February issue of *Computer Gaming World*, which was the big magazine back then, and they had a section at the very back with new releases. They would write a couple of quick paragraphs with a screenshot.

And *Doom* was just in there, and it said ‘You’re a space marine and you’re killing aliens in a base’. And that was it!”

DEMON DAYS

But despite an initially lukewarm response from the media, id Software knew from the number of orders it was receiving that *Doom* was going to be a success. “Back then Usenet was a thing, and there was a weekly top 100 games list. *Doom* came out and it got to the top pretty quickly, and it just stayed there. Then, at some point in early 1994 we started noticing that every gaming magazine had *Doom* in it, in one way or another.”

Romero remembers an article in *PC Gamer* where writer Matt Firme talked about how *Doom* had taken over his life. “*Doom* has forever redefined our expectations of PC gaming,” the article read. “If any new game hopes to win the title Game of the Year, it’ll have to beat *Doom* first.” Romero also has fond memories and high praise of a *Doom II* article he published in 1994. “It had the coolest two-page spread with the title ‘UNSPEAKABLE’, with the Icon of Sin, and I loved that. That’s my favourite article on *Doom* ever.”

“AT SOME POINT IN
EARLY 1994 WE
STARTED NOTICING
THAT EVERY GAMING
MAGAZINE HAD
DOOM IN IT”



RETRO SPECIAL



» BLOOD SIMPLE

Doom's 'controversial' violence was another string to its bow, with tabloid hand-wringing only adding to the game's popularity. The more people who said kids shouldn't play it, the more kids played it. Taking advantage of this controversy, publisher GT Interactive had some, uh, interesting marketing ideas. "They sent packages of guts to reviewers," says Romero. "And they'd have to dig through it to get the floppy disk."

For Romero, this sudden surge in popularity was exciting, but not completely new. "The whole ride was pretty natural," he says. "During the 1980s I had seen personal success in programming that no one else knew about, except maybe my parents. But I was learning stuff, making games, selling games. They were going into stores and I was getting covers of magazines. I was doing all of this stuff while I was in high school."

Romero had even worked for the US Air Force. "I knew how to code so they had me in a vault programming top secret stuff. Because I was working hard on programming, a lot of cool stuff happened. Then I got my first job at Origin Systems, which to me was the ultimate. I was like 'I'm done. I'm now working at the best company I ever wanted to work at.'"

Romero and id Software had also had some interest from the press before, with earlier games like *Commander Keen* and *Wolfenstein*. "There were a lot of amazing reviews in magazines and on the internet about how *Commander Keen* was changing the PC, making it a

ABOVE: An early example of *Doom's* multi-story level architecture, which was unprecedented at the time.

RIGHT: Artwork like this helped sell the idea of *Doom*, and has since become synonymous with the series as a whole.



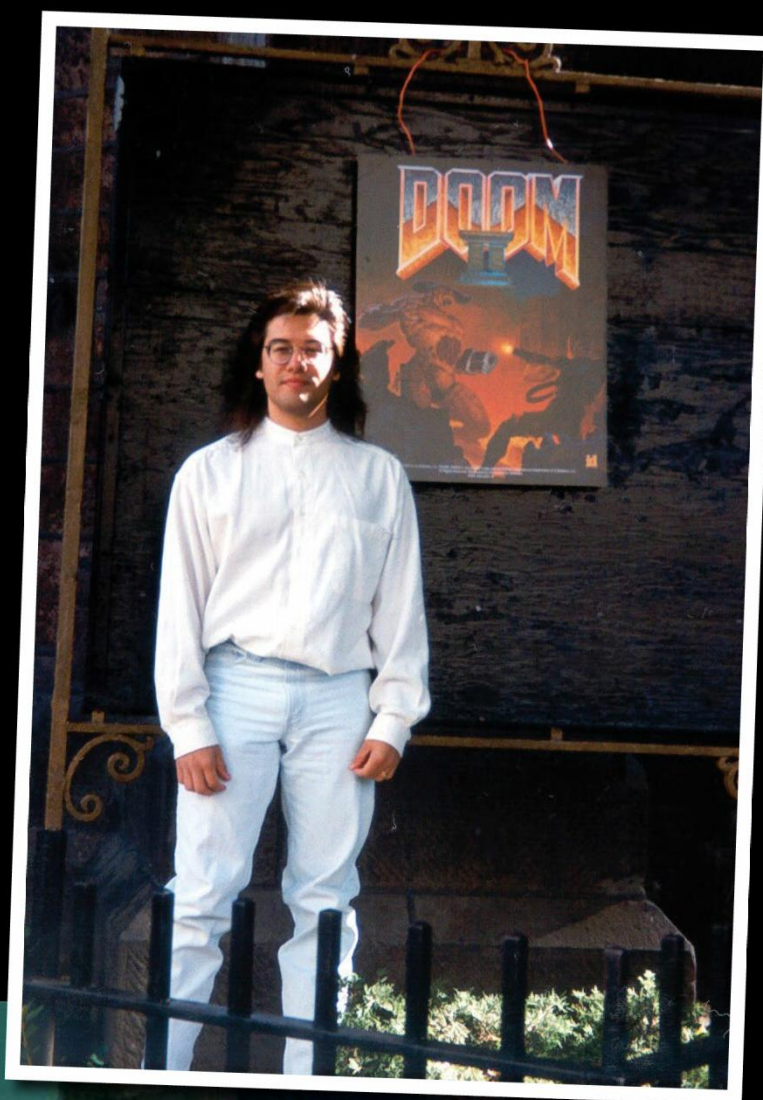
"THEN I GOT MY FIRST JOB AT ORIGIN SYSTEMS, WHICH TO ME WAS THE ULTIMATE"

Nintendo contender. Then with *Wolfenstein*, we got our first radio interview and TV stations came over to do stories. We went to Disney World and people recognised us. So it was like 'Wow, OK, this is the beginning of something. We're doing some cool stuff'. And then *Doom* was the next level, basically."

Doom was created in a time when 3D games were still fairly basic, but for Romero and the others on the team, the hardware limitations of the day were something to be conquered and not to be beaten by. "We were trying to break away from those constraints, and that's why *Doom* was better than other games," he says. "640k was the memory limitation for most games back then, but *Doom* was the first we made that went over the 1MB boundary."

OS AND THEM

Doom's technical advances were also made possible by the switch from



ABOVE: All white, a bold fashion choice even for the time. You just can't get blood stains out of material like that.

DOS computers to advanced NeXTSTEP workstations. "We developed *Doom* on a superior operating system, which allowed us to do more," says Romero. "We developed it on a NeXTSTEP system, which is today's OSX."

"We actually started using this OS back in 1992 during the development of *Wolfenstein*, but to lay out books and stuff like that. Then when we started working on *Doom* we got NeXTSTEP workstations for everyone and it was like night and day. It felt like DOS machines were little toy computers in comparison. They had 1024x768 16-bit graphics. The programming toolkit was unbelievable. So we had worked hard to break out of the box that DOS game developers were normally restricted to."

Doom's complex, abstract, secret-filled level designs are often held up as an example of how modern games have dumbed down. I ask Romero why he thinks this kind of design has fallen out of favour. "Most first-person shooters try to replicate the real world now, and that was kinda where graphics were going the entire time since *Doom*," he says. "People were even modding *Doom* to try and make it look more realistic."

"*Marine Doom* was used by the military to get soldiers used to fast reflexes and reactions. That was replacing the graphics with scanned-in normal humans instead of pixel art monsters. The trajectory of graphics has always been realism, so why wouldn't you make the environments realistic too? And the artistic design of abstract levels is contrary to that."

"*Doom*'s puzzles made sense in that kind of space, but that's harder to do in a realistic setting. However, I >>

CONSOLE COMMAND Romero on *Doom 64*, which you can now play on PC

"I thought it was great. We allowed Midway to do whatever they wanted to do with *Doom*. They were a real game dev company who had been around for decades. Smart people, great programmers. We could trust that they would do a good job with *Doom*. When they made

PlayStation *Doom* they did an incredible job, but with *Doom 64* we said they should do something different than just

replicating the original game. Aaron Seeler, who programmed *Doom 64*, came to Texas and he had an office on our floor so he could pick John Carmack's brain

at any time for tips on how to get the Nintendo 64's chip to run fast. The lighting was great, they were making great levels,

and we were very happy with *Doom 64*. And that's why it's being re-released. It was a fantastic version."



COVER FEATURE

DOOM | HALF-LIFE | SHOGUN: TOTAL WAR | FLIGHT SIMULATOR

➤ think *Half-Life 2* did an amazing job of putting really interesting puzzles in an FPS through physics and stuff. They did a great job of moving the design language forward.”

LEVEL UP

But creating these levels was hard work – doubly so because no one had made game worlds with this level of intricacy before, especially in three dimensions. “One of the biggest hurdles in developing *Doom* was the environments,” says Romero. “Just before *Wolfenstein* we made *Catacomb 3D* and that was our first texture-mapped 3D game. Those environments were like dungeons. Just running through tunnels killing stuff. *Wolfenstein* had VGA graphics and it looked better, but it was still a

maze game. And before *Doom*, every three-dimensional game was basically a maze game. Going back to 1974, everything that was 3D was a maze. If you played *Ultima*, *Wizardry*, or *Might & Magic*, or any game that had a 3D environment in it, you were always in a 90 degree walled maze.

“So we didn’t have any example of how to do something different, and it was a lot of work trying to break out of that. Even the early *Doom* levels we made as examples when I was programming the *Doom* editor were still very *Wolfenstein*-looking, and they weren’t fun to play in. They were basically boring. So I decided one day to solve the problem.”

Romero spent a few hours experimenting and came up with a few sample environments that were



PORT OF CALL
The weirdest things Doom’s been ported to

 PIANO	 OSCILLOSCOPE	 PRINTER
 CALCULATOR	 ATM	 DIGI CAMERA
 SMARTWATCH	 IPOD	 TREADMILL



“THE ACTUAL LAYOUT AND ARCHITECTURE OF THE LEVELS NEEDED TO BE FUN TO PLAY IN”

LEFT: The original chainsaw sprite was based on a photograph of a McCulloch Eager Beaver, a real-life chainsaw.



far more interesting than the samey mazes of *Wolfenstein*. “The other guys saw it and they were like ‘Wow, this is it. This is the style we need to go for’. And so we went full-on abstract, not worrying about making things look realistic.”

“We could make objects in the world look realistic, like crates and stuff, but the actual layout and architecture of the levels needed to be fun to play in, look cool, and not adhere to any kind of realism. They just needed to be really fun, and that was the beginning of *Doom*’s abstract style of level design, which basically all ’90s games went on to use.”

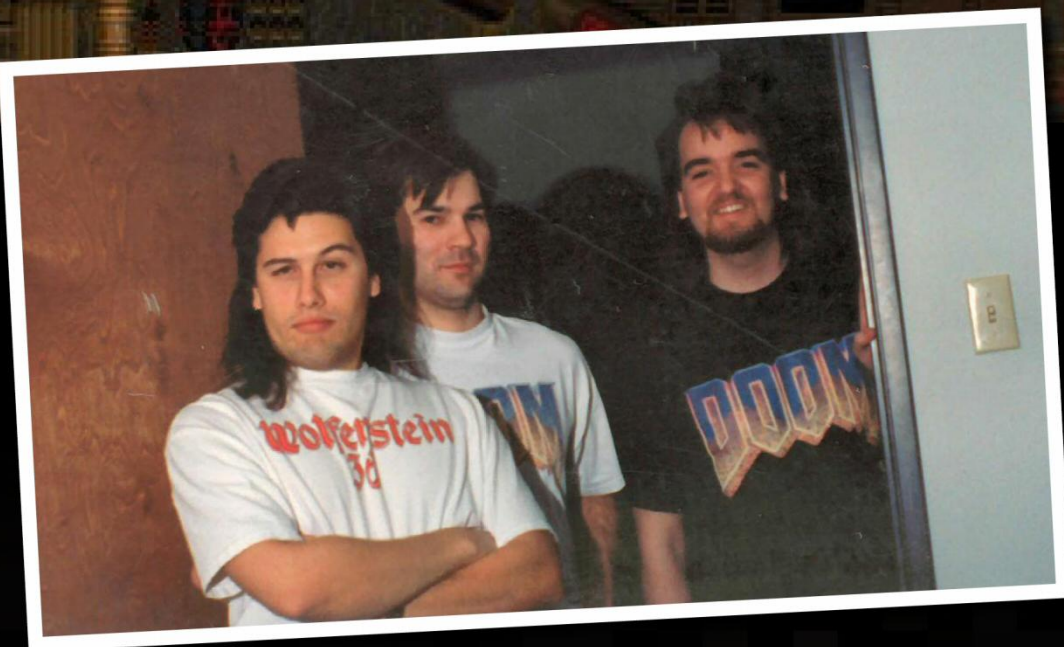
“Darkness was a really big factor in making the game feel suspenseful and tense,” explains Romero. “In E1M3 when you go to get the keycard, it’s the first time that the lights are turned out on you. People never forget the first time they saw that. You grab the blue keycard, the lights go out, and you just hear hissing. You turn and you see the silhouettes of about five Imps coming at you in a dark room and you have to find the way out.”

CRACKING THE CODE

But *Doom*’s engine unfortunately had no built-in support for doing tricks like this. If Romero had an idea for something cool, he couldn’t just quickly rig it up – he had to go in and code it himself. “When you see lights flickering, doors opening, lifts going

ABOVE: *Doom II* introduced a number of monstrous new demons, including the iconic (literally) Icon of Sin.

RIGHT: id Software is a classic example of a small, talented group of dedicated people changing the face of an entire industry.



up and down, taking damage from slime... any gameplay thing happening in a level, I did all the programming for it, which came from what I felt like I needed to have in the game at that time.

“So if I’m like ‘Oh, I need to have the floor rise out of the slime, and I need the floor to turn into a normal floor when it rises. What are the rules for that happening?’. Then I had to go into the editor and code that trigger and what that trigger does. Then I needed to go into the game code and program it so it would actually do that. Then I had to go back into the editor and put it into the level to see if it would work the way that it should. And I had to do that with every single special thing in the game.”

“*Doom* was designed as we were making it. There wasn’t a big list of all the things we needed. It was like ‘I’m making a level and it would be

cool to have a flickering light here’, and that’s it. Start programming it. And everyone who has been making *Doom* levels since has been using stuff I came up with in five minutes for that one thing. These features didn’t take long to implement, really, but they’ve lasted for decades.”

And that’s the core of what makes *Doom* a genuine masterpiece. It was created by a group of supremely talented, passionate people who were obsessively pushing the technology of the time to its limits – and doing so because they wanted to make something great. Everything else aside, it’s just a really well-made game, and will likely endure for another three decades.

As for John Romero, he’s still a part of the games industry, still making games, and still keeping *Doom* alive with projects like his *SIGIL* expansion. A lot of games burn bright then quickly fade away, but *Doom* is eternal. ■



UNFORESEEN CONSEQUENCES

22 years later, **HALF-LIFE**'s influence is still being felt.

By Jody Macgregor



recently spoke with Vincent Adinolfi, an indie designer working on a game called *Heartworm*. It's

low-poly 3D survival horror, so when he brought up influences like *Silent Hill*, *Resident Evil*, and even *Dino Crisis*, that was to be expected. But then he mentioned Valve's classic 1998 FPS. "I've tried to take cues from games like *Half-Life* in the way that Valve uses environment design to naturally develop the narrative," he says.

It's not the first time I've heard developers namecheck *Half-Life* while making games very different to it. Its effect on the way games tell stories transcends genres. Which is surprising given how few other 1990s shooters even had stories.

John Carmack of id famously said stories are as irrelevant to games as they are to porn, which explains *Quake*. Sure, adventure games and RPGs might need plots, but what does an FPS have to gain? When *Half-Life* proved even a game about shooting zombies could be improved with a memorable story, it made the point for everyone. And it did it



RETRO
SPECIAL





INTERVIEW



Dario Casali Level Designer, Valve

On Black Mesa:

"I played probably five hours of the original *Half-Life* and then I said, 'Well, what are you doing? Just go play *Black Mesa* cause they've just redone this in Source'. Then I just restarted, I started *Black Mesa* from the start. I played through all of that, and they did an awesome job. Such a great execution that I kind of didn't want to go back and play *Xen* from *Half-Life*."

On underexplored potential:

"With *Half-Life*, I feel like there was such a rich set of mechanics I don't think that we exploited fully. I think we jumped to *Half-Life 2* immediately and then reinvented everything. I think there would have been a lot of room for further exploitation for the use of some of those mechanics and we just never did."

➤ without cutscenes or a single paragraph of text. Mainly, it did it through *Black Mesa*.

INTENSIVE SCARES

Half-Life's writer Marc Laidlaw once explained on his blog that *Half-Life* was initially planned to be a nonlinear game. That all changed because, as he put it, "All narrative forms of drama, but especially horror, rely on pacing and rhythm. In horror timing is crucial. You have to set up your traps just so, and wait until your victim is precisely in position."

While previous shooters had elements of horror – *Doom* had a chainsaw and shotgun because id were fans of *Evil Dead II* – the games were never horror themselves. They were action in Halloween clothes.

The first third of *Half-Life* is, as Laidlaw says, explicitly horror. There's the slow burn, where we're introduced to the characters at their most mundane, though with teasing hints of what may be about to go wrong. Then we see their ordinary world turned upside down, made dark and broken. Just like *Alien*, or *Night of the Living Dead*, or *It*.

Half-Life's flashlight and its recharging battery are essential to its scares. You crawl through a vent, throwing that pool of light ahead of you, knowing it could run out before you reach the nearest exit. You turn it off to recharge for a moment, flick it back on, and light up a rearing headcrab's underside.

While several shooters after *Half-Life* copied its blend of horror

and action, like the *FEAR* series (which also successfully imitated *Half-Life*'s squad AI), its influence was most felt in the first-person horror genre. Every game that gives you light as a limited resource, from *Amnesia* to *Outlast*, has that tiny bit of *Half-Life* in its DNA.

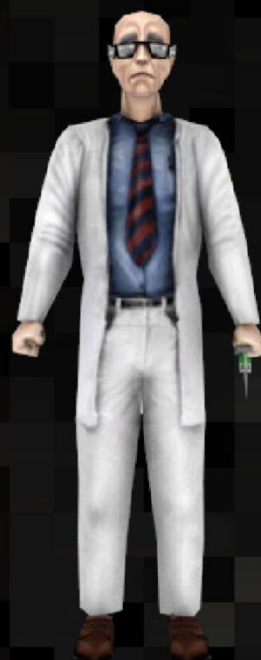
DEAD GOOD

When Laidlaw brought up horror he wasn't just talking about darkness and monsters. He was talking about setpieces. The security guard with a zombie shambling up behind him, or the scientist trying to perform CPR on a fallen coworker. In *Doom* you find dead marines next to some spare ammo – in *Half-Life* you see their deaths and it hits you harder.

Ian Vogel, the level designer responsible for the Med/Sci level in *System Shock 2*, has said these "emotional anchors and prods" were a big inspiration for him. In *System Shock 2* you're on a research spaceship that's been invaded, a scientific facility that's in a similar state of emergency. You see a lot of people in lab coats being dismembered on the other side of bulletproof glass, a trick *Dead Space* would also notably repeat.

This formula – environmental storytelling spread across an impressive but collapsing testament to man's hubris – would see its ultimate manifestation in *BioShock*. Every game that uses deaths on the other side of doors, or bodies carefully arranged on toilets or in beds to tell a little story that you

ABOVE: I'm drawing a line from the Resonance Cascade to Thirty Flights of Loving. Then I'm nodding.





arrived too late to see, owes a significant debt to *Half-Life*.

To ensure you catch these moments, *Half-Life* guides you with trails of blood, screams and lights. It hints at puzzle solutions the same way. A vent will have a convenient light shining out of it so you know where to go, a switch gives off sparks to suggest it's connected to the sparking wire hanging in the water; a jumping sea-monster makes you look up at a shark cage, bubbles suggest life-saving breathing spots.

These techniques for pulling your eyes would be further refined in *Half-Life 2*, where a flying ship might draw your attention up to note a climbable spot, or a green light shine on an exit. From there they propagated, and everything from *Call of Duty* to *Mirror's Edge* signposts paths with *Half-Life*'s tricks.

MOD NATION

That's all on the single-player side, but *Half-Life*'s influence goes beyond that. Its multiplayer mod scene was as big as *Doom*'s, and gave us *Natural Selection*, *Cry of Fear*, and *Sven Co-Op*, all of which went on to become standalone games. The team behind *Age of Chivalry*, a total conversion which replaced guns with swords, formed Torn Banner Studios and turned their mod into *Chivalry: Medieval Warfare* – now getting a sequel this year.

Rights to the World War II mod *Day of Defeat* were bought by Valve and it too became standalone, while

the modders who made the original *Team Fortress* for *Quake* were hired to develop *Team Fortress Classic* as a *Half-Life* mod to show off its multiplayer potential. Then they made *Team Fortress 2*. Without that there would be no *Overwatch*, and no hero shooter genre.

And of course there's the elephant in the room: *Counter-Strike*. Its creators, Minh 'Gooseman' Le and Jess Cliffe, were also hired by Valve and *Counter-Strike* became a series with its own esports league and an economy that puts small nations to shame. Without *Counter-Strike*, round-based modes where players work together in two squads to complete objectives doesn't become the default first-person shooter multiplayer mode, another game has to be the first to go in hard on recoil modelling, and 950,000 people have to find a new game to play.

This isn't the end of the story. Because while *Half-Life*'s influence is obvious once you start to look for it, its broader effect is invisible. It's there when Vincent Adinolfi, making his survival horror game – and every other designer tying narrative to level design – remembers how *Half-Life* handled environmental storytelling. Whenever someone thinks plot is more important in videogames than it is in porn, whenever they think that just because a game has guns doesn't mean it can't have a narrative, *Half-Life* is there. ■

TOP: Enemies fighting other enemies, something *Half-Life* borrowed from *Doom*.

ABOVE: Bad things happen to NPCs in vents.

HALF-LIFE GUIDES YOU WITH TRAILS OF BLOOD, SCREAMS, AND LIGHTS



On why people still care so much about *Half-Life* today:

"I read a lot of reviews, and I talk to a lot of people about what they like about the games, and when they describe them to me I feel like those types of things have been done again since. Is it perhaps that *Half-Life* and *Half-Life 2*, they introduced certain concepts to games pretty well? Like, the introduction of more interactive storytelling for *Half-Life*, perhaps we were laying the groundwork for that to be the norm in videogames to come."

On how well the game holds up these days:

"When I replayed it again, I was kind of blown away by the ambience that was created by the first half of the game. I think as you progress further in, you start to see like the game's age a little bit. But I definitely think that first third was very compelling."

DECLARATION OF WAR

How **SHOGUN: TOTAL WAR** started a 20-year legacy... but almost didn't.

By Fraser Brown



Two decades ago, *Shogun: Total War* spawned a history-spanning strategy series, several

spin-offs and even a detour into Warhammer. Almost all of them are unified by tactical real-time battles, turn-based empire-building, and a foundation that was established all the way back in the late 1990s, during *Shogun's* development. But the first concept for the game looked very different.

In 2000, Creative Assembly released its hybrid. There was diplomacy, trade, ninjas going around murdering people; then you'd quickly have to switch gears so you could micromanage individual units and crush your enemy in real-time scraps. These fundamentals haven't been changed, but before the studio came up with the enduring formula, it was creating a traditional *Command & Conquer*-style RTS.

SHOGUN CONTROL

The first change came when graphics cards started appearing, giving the team the freedom to build 3D maps with more realistic terrain. When, on a whim, the camera was changed so that it pointed at the horizon, the traditional top-down perspective was also thrown out. But one vital ingredient was still missing.

"The campaign map was meant to give context to the battles," recalls artist Nick Tresadern, who joined when the *Total War* team was just seven people. "We thought if we just did a series of battles in a row it wouldn't be as personal to the player because they didn't choose to fight that next battle.

By doing the campaign map, the player chose to move into that province and fight that army; it made each battle particular to them."

Features more common in meaty tabletop wargames at the time also made an appearance, but thanks to the real-time 3D fights they were less abstract. Cowardly units could make a break for it and flee the battlefield, ignoring orders, while line of sight could be affected by fog and terrain.

"The battles innovated in a few ways, certainly in terms of battlefield realism," says UI designer Joss Adley, who also joined Creative Assembly during the *Shogun* days. "We still had these sprites running around, which everyone is familiar with, but we added morale, the idea of fatigue and the idea of weather affecting unit performance. It was quite severe in some cases – if it was a rainstorm, the primitive arquebus guns just wouldn't fire at all."

GRAND AMBITIONS

Shogun was two deeply connected games in one, and not a lot was left on the cutting room floor. At one point a 'Guess Who' feature was considered, where you'd have to look for traitors based on vague descriptions like 'he has a moustache'. It didn't survive. And even back then Creative Assembly was considering a multiplayer campaign – and a play-by-email system – though it didn't end up appearing until *Napoleon*. At least *Shogun 2* benefited.

"It completely laid the foundations for all the *Total Wars* to follow, and there's very little we removed," says Adley. "It was mostly adding on stuff. Obviously there was a big change with the campaign

map style from *Medieval* to *Rome*, where it went from Risk-style to more action-point-based, but apart from that pretty much everything [else] remained."

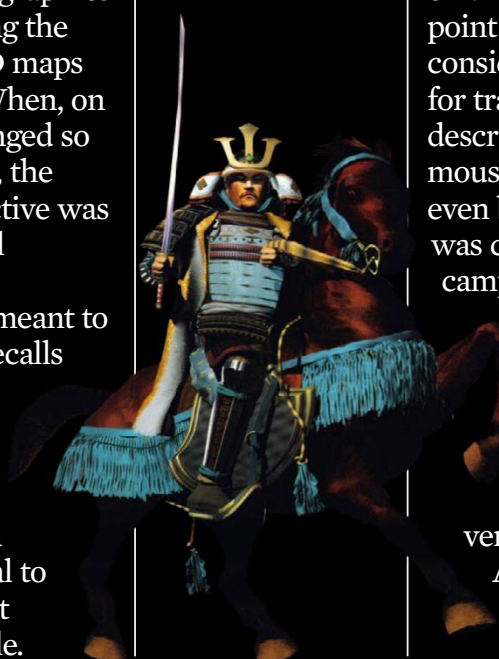
Creative Assembly, which had previously developed EA Sports games, didn't know it had a series on its hands, but it was prepared. "The *Total War* part is the brand, and that was in there quite early," says Tresadern. *Total War* was there before *Shogun* was settled on, and the team knew it could translate the game to another setting, which it soon did with *Medieval*.

With future games came new systems inspired by the settings, but other changes came with better tech. Multiplayer, larger army sizes, sieges with loads of destructible buildings – every iteration pushed things forward. Back in *Shogun*, even with the sprite units, memory constraints imposed some serious limitations.

"We didn't have enough memory to do left and right, so when the guys moved left it just flipped the sprite in real-time," Tresadern remembers. And while the campaign had a bespoke, themed user interface, the battle UI was stuck with some white boxes because there was no more space for textures.

While *Total War* has carried on what *Shogun* started, surprisingly few other games have even attempted to take a crack at it. Strategy developers have definitely taken notes and built on *Total War* ideas, but hardly any have remade the whole. Maybe they're the sensible ones.

"Setting out to make a project that's essentially two projects in one – it is double the amount of work – I think is just a crazy thing to do," says Adley. "I don't think anyone wants to go there. I'm surprised we did." ■





ABOVE: Even with the sprite units, it's still recognisably *Total War*.

FAR LEFT: The Throne Room scenes are one of the few things that haven't continued.

BELOW: The campaign was added to support the battles, but it's become just as important.

SHOGUN WAS TWO DEEPLY CONNECTED GAMES IN ONE



GO FOURTH AND MULTIPLY

FLIGHT SIMULATOR 4.0, the sim that started a subculture.

By Tim Stone



en years after the Wright Brothers outwitted gravity at Kitty Hawk, the revolution they started went into overdrive when European militaries realised flying machines were useful for more than just reconnaissance. *Microsoft Flight Simulator* experienced a similar growth spurt a decade after its birth, but happily in its case all-out war wasn't the spur.

Flight Simulator 4.0 inadvertently turned a franchise into a hobby by throwing open the hangar doors to all and sundry. The 1989 release came with a simple tool that allowed users to tinker with airframes and flight characteristics. More significantly, it was designed with the kind of porous edges and friendly file formats that helped people to build tools for it.

Soon meddlers had access to a pair of powerful aircraft and scenery editors. Within a few months the sim's high-detail landscape areas were multiplying furiously and being shadowed by all kinds of exotic cloud cleavers. There were bat-shaped Horten flying wings buzzing the tower at Meigs Field; low-flying supersonic SR-71 Blackbirds spooking invisible motorists on the Golden Gate Bridge; X-wing fighters barrelling down Broadway.

Because websites like FlightSim.com and Avsim.com weren't even eye twinkles at the time of this flowering, *FS4*'s enthusiastic band of fuselage sculptors and landscape gardeners relied on CompuServe's 'FSFORUM', the sim community's very first online meeting place, for distributing and discussing their wares. Little did they know it, but these pioneers were laying the foundations for what is

today, gaming's most enduring cottage industry: *FS* add-on crafting.

PLANE PLETHORA

If it has wings – fixed or rotary – and has ever carried a homo sapien aloft, there's a pretty good chance you can fly it in a recent version of *Flight Simulator*. For an aviation enthusiast like myself, one of the joys of the series is that I can slip a bookmark into a pilot memoir or reference book, and, within minutes, be sitting in the cockpit of one of the machines I've just been reading about.

Today the choice of aircraft is dizzying. Fortunately for those of us with slim wallets and limited leisure time, for every £75 jetliner so brain-bruisingly faithful that customers use real aircraft manuals as training aids, there are hundreds of free or far cheaper offerings that can be enjoyed without hours of preliminary PDF study. Repaints, scenery enhancement packs, mission-style adventures... if you're not careful you can spend more time

downloading and installing tempting extras than sampling them.

FLYING LESSONS

The failure of aspiring *Flight Simulator* replacements such as *Microsoft Flight* and *Flight Sim World* illustrate just how important open architecture is to a community that has known little else for the past 30 years. Both Microsoft's and Dovetail's short-lived experiments felt restrictive in comparison with what had come before and suffered for it.

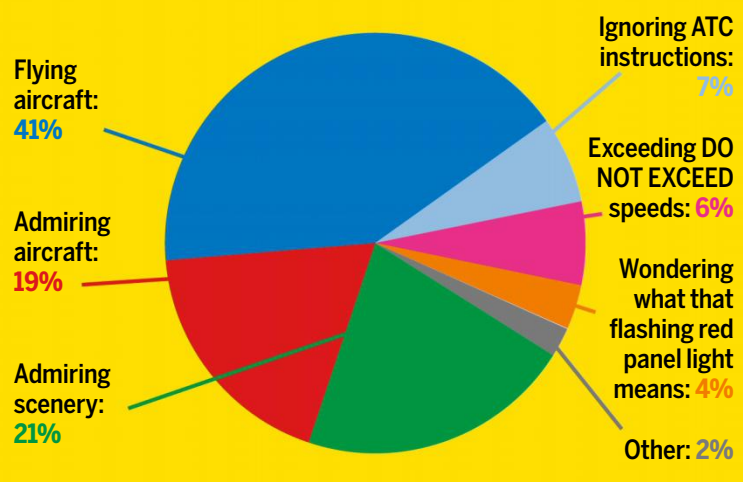
Will the next *Flight Simulator* make the same mistake? It's hard to tell at present. Official statements insist third-party add-ons are part of the grand plan, but until details of the business model emerge it's difficult to predict how enthusiastically the newcomer will be received by the hundreds of studios that are currently fixated on *Flight Simulator X*.

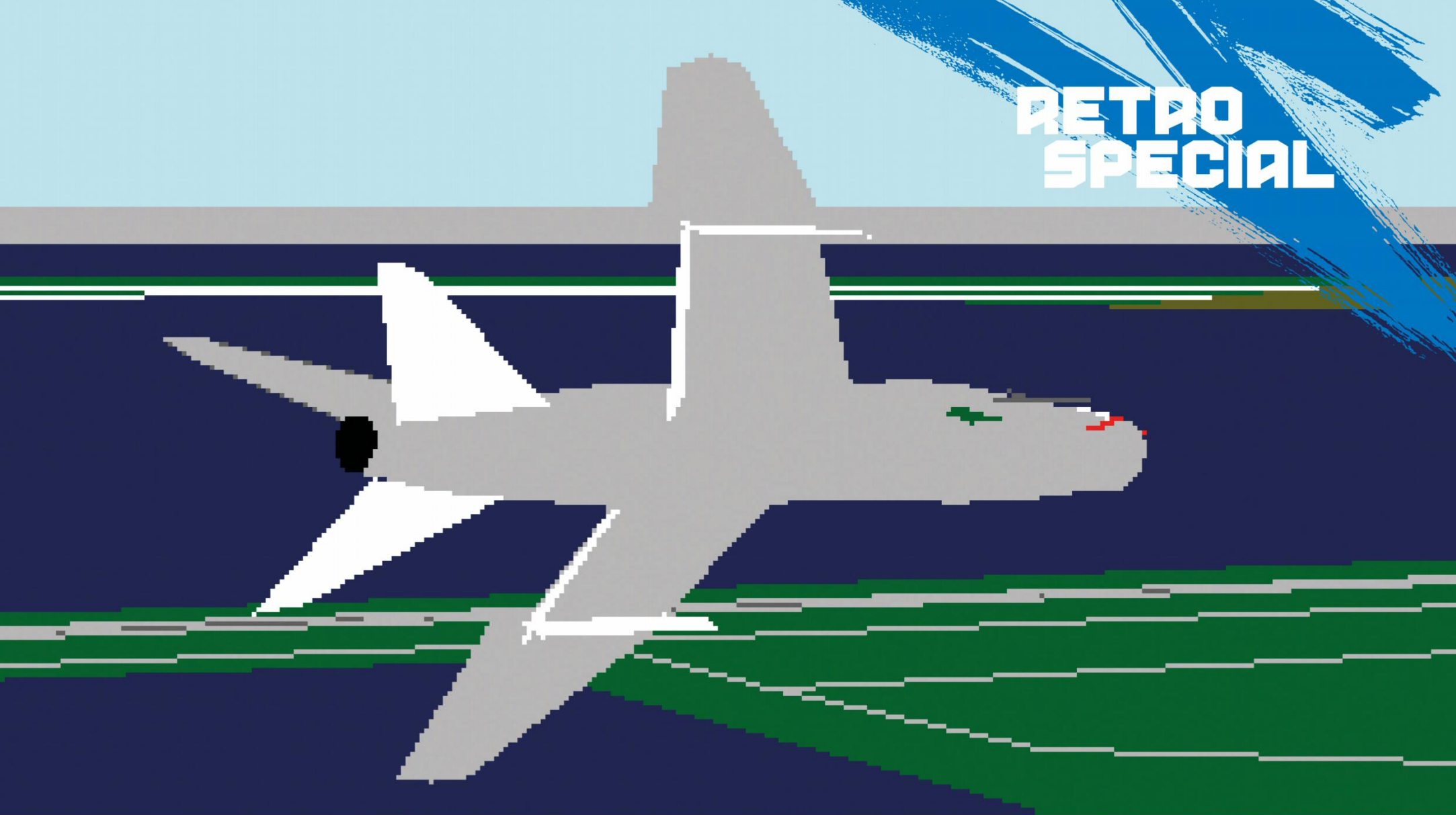
Sadly, one fairly safe bet is that the coming instalment won't be as overtly playful as 4.0. Lurking under an unapologetic 'ENTERTAINMENT' heading in the veteran's menu are a host of modes designed to appeal to thrill-seekers rather than autopilot programmers. You can dogfight, barnstorm, crop spray and alight on carriers, when the crosswind low-visibility landings cease to stimulate. I hope Asobo's offering isn't so busy being ravishing and realistic that it forgets to include a few similar activities. Aerial firefighting, air ambulancing, or helicopter cattle driving, anyone?

But it's *Microsoft Flight Simulator*'s attitude to add-ons that could make or break it in the eyes of some silver-templed simmers like myself. *FS4* opened an aeronautical Aladdin's cave and I'd hate to see that cave closed off. ■

BLACK BOX

How I pass the time during an FSX flight





ABOVE: Textures wouldn't arrive until FS5.

FAR RIGHT: *SimplePlanes'* great great grandfather.

BELOW: FS4's mouse utilisation was absolutely superb.



FLIGHT SIMULATOR 4.0 INADVERTENTLY TURNED A FRANCHISE INTO A HOBBY

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REVIEW

HOW WE REVIEW

We review each game on its own merits, and try to match it to a reviewer who's a passionate expert in the field. The main aim of reviews is to help you make buying decisions. To this end, we're selective about what we review, and try to focus on the notable, interesting, exciting or surprising.

DOWNLOADABLE CONTENT

DLC might be new missions for a game, or it might be a single new item. If we think you want to know about it, we'll review it.

EARLY ACCESS

Any released alpha, beta, or otherwise unfinished game that you can currently pay for. For these games, we won't assign a score, but we will tell you whether they're worth your time.

THEY'RE BACK

Whenever there's a bargain or re-release of a significant game, our expert will revisit it and tell you whether it holds up today. With jokes.

OUR SCORING SYSTEM EXPLAINED

00%-09% Broken or offensively bad; absolutely no value.

Example *Leisure Suit Larry: Magna Cum Laude*

10%-19% We might be able to find one nice thing to say about it, but still not worth anyone's time or money.

Example *Gettysburg: Armored Warfare*

20%-29% Completely falls short of its goals. Very few redeeming qualities.

Examples *Family Guy: Back to the Multiverse*

30%-39% An entirely clumsy or derivative effort. There's little reason to play this game over a similar, better one.

Examples *Trials of the Blood Dragon*

40%-49% Flawed and disappointing.

Examples *Aliens: Colonial Marines*

50%-59% Mediocre. Other games probably do it better, or its unique qualities aren't executed well.

Examples *Primordia, Homefront: The Revolution*

60%-69% There's something to like here, but it can only be recommended with major caveats.

Examples *No Man's Sky, Ghost Recon: Wildlands*

70%-79% A good game that's worth playing. We like it.

Examples *Prey, NieR: Automata*

80%-89% A great game with exceptional moments or features, and touches of brilliance. We love it.

Examples *Overwatch, Night in the Woods*

90%-94% A compelling recommendation for most PC gamers. Important to PC gaming, and likely ahead of its time.

Examples *Bayonetta, Dishonored 2*

95%-96% Far and away one of the best games we've ever played. We recommend it to the entire world.

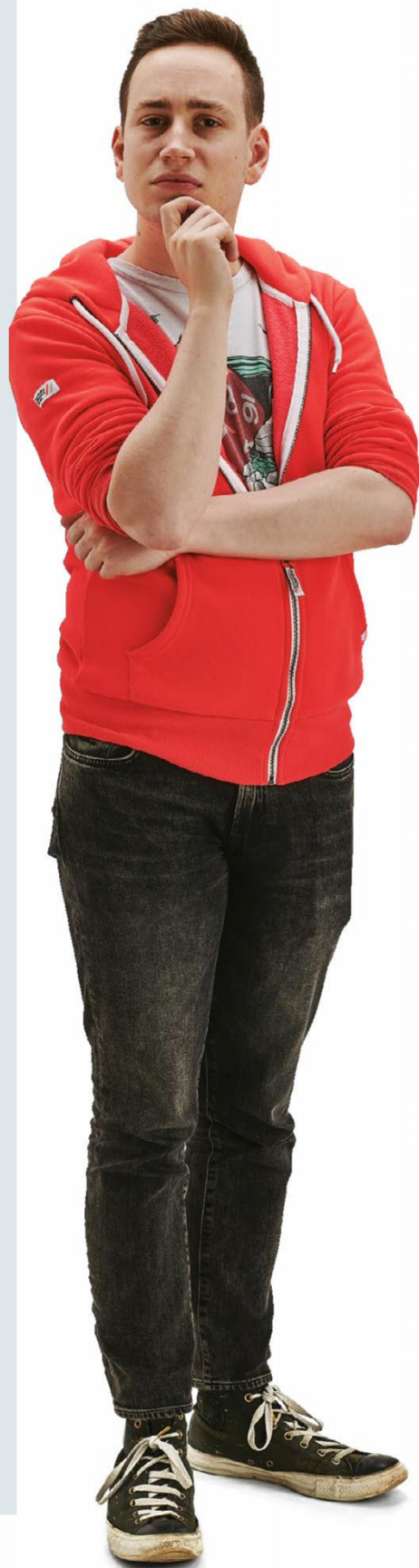
Examples *Half-Life 2, Kerbal Space Program*

97%-100% Advances the human species. Boosts the immune systems of nearby children and small animals.



The Editor's Choice award is granted in addition to the score, at the discretion of the PC Gamer staff. It represents exceptional quality or innovation.

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Rain check

Well, the great dry spell of games releases is officially over – and what a way for the waters to return.

There's a new *Doom* and it's excellent. There's a new *Half-Life* and it's excellent. Hell, *Black Mesa* even came out, finally. Guess what: it's excellent too.

Games reviewers have a bit of a reputation sometimes for being jaded cynics, happy to see big releases fail. Nothing could be further from the truth, of course – we're just as excitable and hopeful about games as any fan. For these three releases, part of me was tempted to just post transcripts of our giddy, joyful Slack back-and-forths in lieu of actual reviews.

And now that id and Valve have broken the seal, there should be many more thrilling releases to come this year. That is, assuming they don't all get delayed by some sort of sudden global crisis.

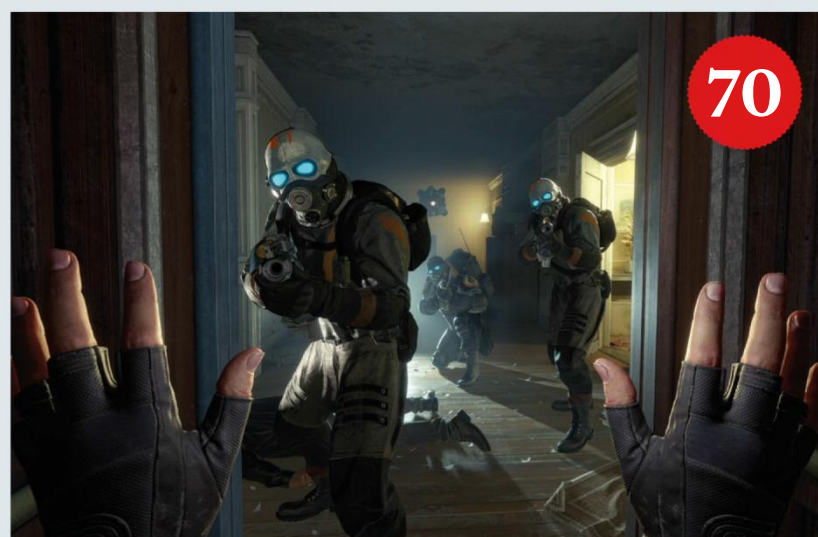
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WHAT YOU THINK

Email us via letters@pcgamer.com with your reactions, or simply tweet us your thoughts @PCGamer



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This month's hell-raising reviewers...



JAMES DAVENPORT
Specialist in
Lead exorcisms
Currently playing
Doom Eternal
This month
Had to keep checking
his blood pressure
between sessions.



TYLER WILDE
Specialist in
Forest navigation
Currently playing
*Ori and the Will of
the Wisps*
This month
Wasted days trying to
figure out what Ori
actually is.



ANDY KELLY
Specialist in
Xen meditations
Currently playing
Black Mesa
This month
Fought a cleverly
re-imagined,
beautifully rendered
giant alien testicle.



CHRIS LIVINGSTON
Specialist in
Improbable sequels
Currently playing
Half-Life: Alyx
This month
Started using the
phrase 'killer app'
unironically.



FRASER BROWN
Specialist in
Min-maxing
Currently playing
*Wolcen: Lords of
Mayhem*
This month
Tried to build a perfect
warrior in a decidedly
imperfect world.



TOM SYKES
Specialist in
Special ingredients
Currently playing
The Supper
This month
Baked a tasty pie.
Hold on, has one of
our staff writers gone
missing?



MATT ELLIOTT
Specialist in
Past mistakes
Currently playing
Daikatana
This month
Became John
Romero's bitch, if 20
year old marketing is
to be believed.

HEAVENLY

DOOM ETERNAL is one of the most intense shooters ever made. *By James Davenport*

I just finished *Doom Eternal* and I'm feeling anxious and exhausted. I've kneed the underside of my desk too many times to count from tensing up. My hands are soft from sweating and my knuckles crack when I try to make a fist. A computer game actually managed to hurt me. *Doom Eternal* is a celebration of excess. Excess in sin, in violence, scale, speed, and volume. I've never played a shooter this intense and demanding.

Doom Eternal also runs beautifully on a wide range of hardware and feels designed for a mouse and keyboard first. It's a modern classic, with a few caveats. Cheap deaths from getting stuck on geometry happen too often. There are six or seven layers of unnecessary progression. *Doom's* dark humour has mostly been traded in for deep lore and a high-fantasy cosmology. And the strain from a heavy focus on resource management is felt at every difficulty level. I worry that for some, it could be *Doom: But Too Much*.

But 'too much' works for me as *Eternal's* guiding light. The moment-to-moment combat is distilled panic rather than empowerment. I live for

the fleeting moments my head gets above water within the hurricane of light and noise and violence, and I pull off a feat of accuracy and reflex I never thought I was capable of.

Doom Eternal is a tough teacher. A

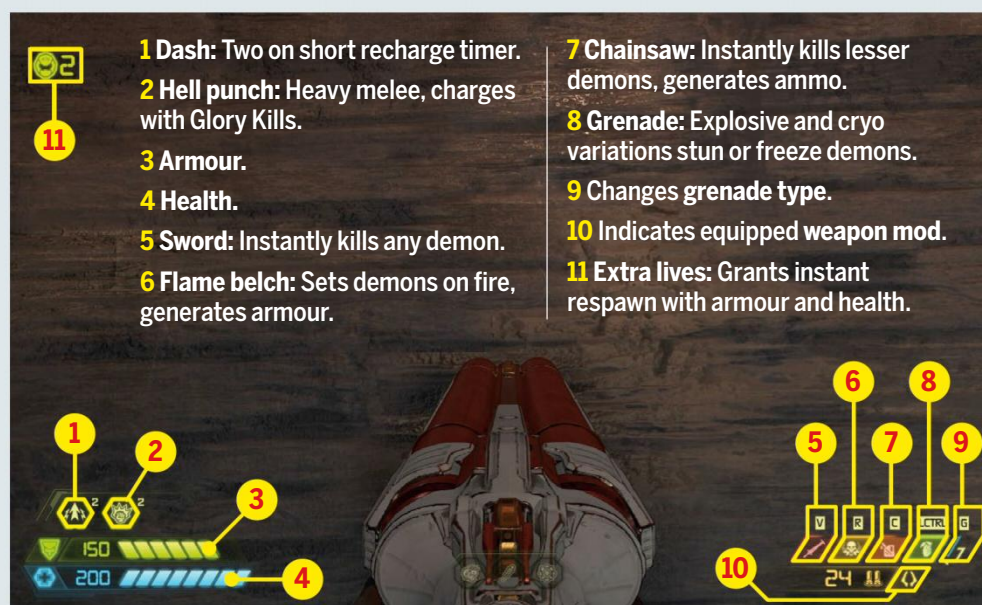
few hours in I'm getting by just fine, juggling half a dozen weapons, belching fire on the hordes to spawn armour, tossing grenades at every opportunity to stun and soften up the crowd.

I'm dashing in and out of the action for the occasional Glory Kill to keep my health topped up, dodging projectiles and managing the arena, deciding, between breaths (if I remember to breathe) which demons to attack based on who's currently kicking my ass the most.

Updated viewmodels reinforce each weapon's heft and sheen

FLASHY DASH

Decoding Doom Eternal's new abilities and busy UI



NEED TO KNOW

WHAT IS IT?
A shooter obsessed with speed and stress

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£50

DEVELOPER
id Software

PUBLISHER
Bethesda Softworks

REVIEWED ON
RTX 2080, i9-9900K, 16 GB RAM

MULTIPLAYER
PvP

LINK
bethesda.net/game/doom



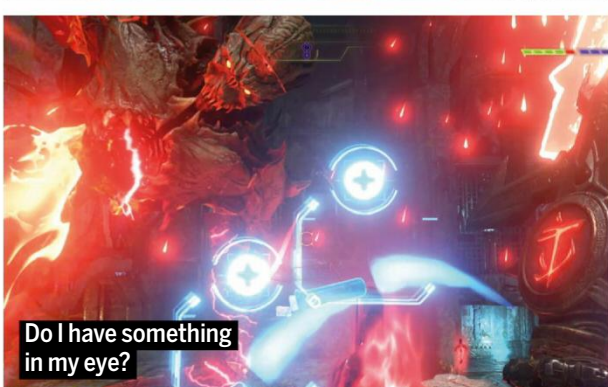
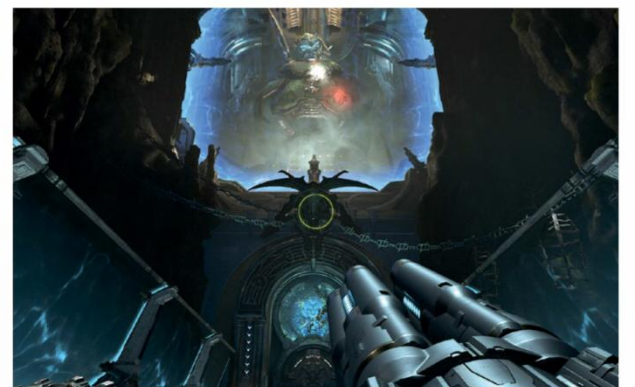
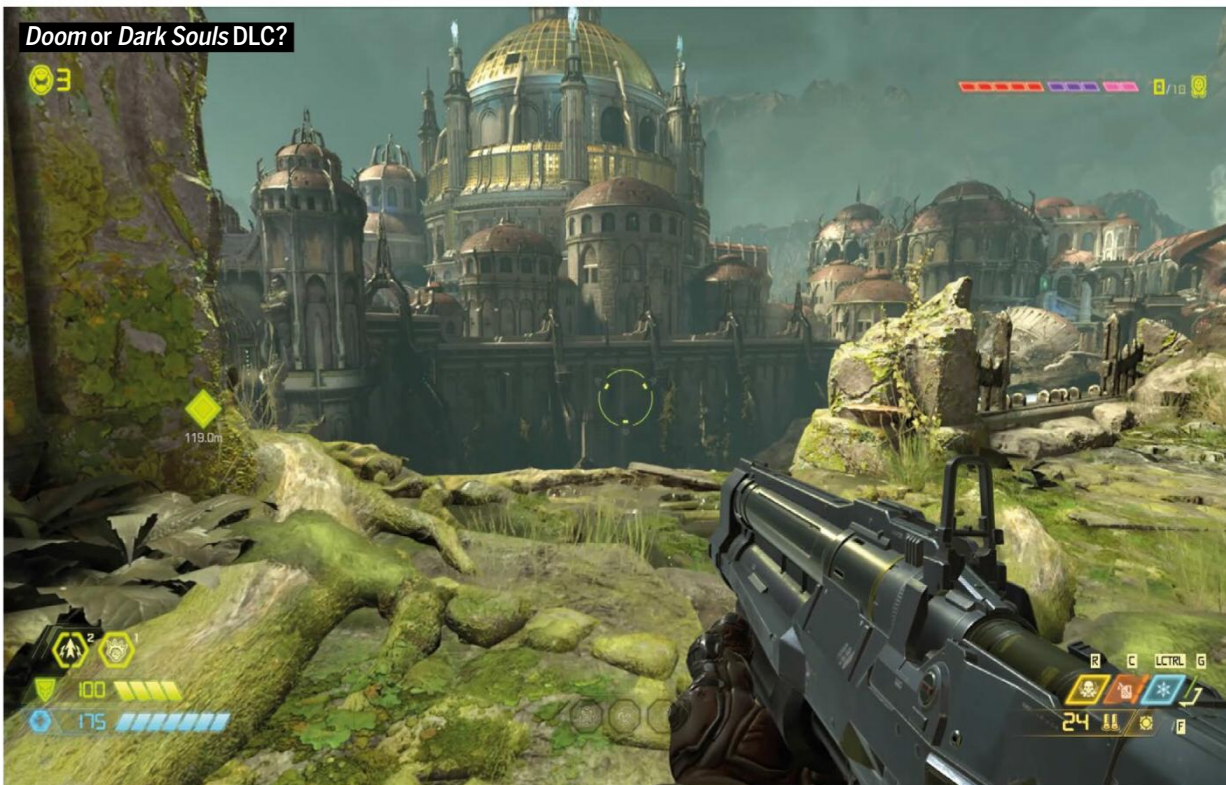
Late into the fight a Marauder appears. This guy has an axe, a shield, and only opens up to damage if you counter a specific attack with a precisely timed gunshot. Blasting it with a rocket barrage does nothing. With this enemy design, *Doom* is asking me to stop shooting and moving so much. It's playing with the comfort zone I've built over decades of playing arena shooters. Now I have to let up on the trigger, to circle-strafe and assume the calm restraint of a *Dark Souls* duel. I hate this enemy at first, but then I get the hang of it after a dozen or so attempts.

I've been playing these shooters since I was a teen. But *Eternal* isn't just asking me to just get intimate with my keyboard's number row, it's challenging me to change playstyles in the middle of a classic *Doom* arena fight, to stop doing boxing and start doing judo. Managing resources, switching weapons, staying on the move, prioritising demons based on the arena shape and current threat is plenty to juggle for most people, but *Doom Eternal* makes you change age-old habits too.

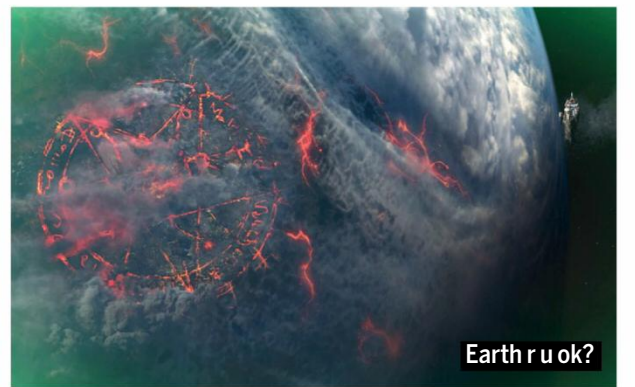
BULLET HELL

Doom's guns aren't as subject to this complexity. The old gang is back again. Hello, combat shotgun. Hello, plasma rifle. Hello, BFG. With more opportunities to refill ammunition and heaps more arenas with ways to get airborne, the previously under-utilised ballista gets heavy use as a railgun stand-in and stylish airborne demon deletion tool.

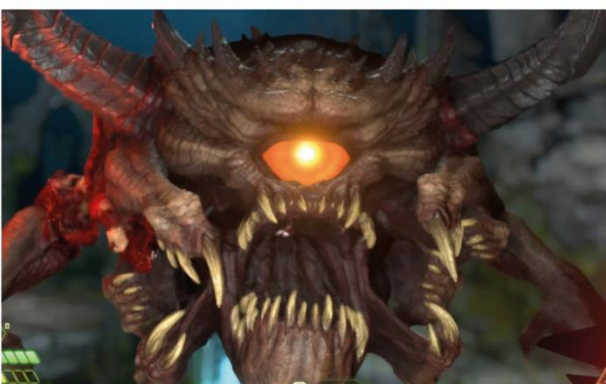
Updated viewmodels reinforce each weapon's heft and sheen, and the gun skins rewarded for completing certain milestones are weird but not unwelcome in a singleplayer game. Refined reload and firing animations imbue each with a sense of mechanical realism, especially the alternate firing modes, which have way more utility this time. But the guns haven't lost the fundamental character they had in *Doom 2016*. The big changes in *Doom* >>



Pretty eyes.



Mars ru ok?



Doomguy is a dramatic ledge-grabber.



» *Eternal* are in how it handles resource management.

Glory Kills still reward health for staggering a demon and finishing them with a special melee kill animation, but chainsaw kills, which drop ammo, are far more important for keeping your guns fed. Burning through every bullet takes little time. Throw in the flame belch, a tool that lights demons on fire to make them puke up armour for a bit, and suddenly half of each fight becomes about juggling resources.

Making your enemies your life-saving resources contributes to the overbearing tension of *Doom Eternal*. Chasing demons into a dangerously tight space normally isn't a great idea, except when it's the setup for a quick flame belch followed by a grenade or rocket. Every stray imp is a potential ammo cache, so keeping a few around just in case is a good plan, so long as you're willing to pay the annoying fireball tax. You have to confront these guys to stay alive, and it's rarely on your own terms.

Yes, it makes zero sense that you light monsters on fire in order to get them to drop armour shards. But oddities like this feed into an exhausting vibe, and farming armour from the same guy I'm duelling creates a give-and-take with enemies that isn't present in games.

RUNE MATES

Also on the pile of new stuff to digest: a lot of progression systems. Weapon points, runes, secrets, sentinel

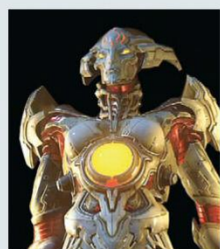
batteries, suit upgrades, challenges, weapon mods, skins, weapon mod upgrades, weapon mastery upgrades – it's a lot. Too much, really, because *Eternal* places the bulk of these upgrades along the critical path. By the end I had almost every upgrade and without trying too hard to find them all, as if it's all an elaborate front built to make players feel good while ensuring they stay at pace with the steep difficulty curve.

The ability to climb certain walls, dash in midair, and swing from monkey bars makes for some challenging navigation sequences, but I wanted to spend more time soaking in *Eternal*'s incredible settings rather than dashing my way through them.

The new forms of mobility do shine in the arena, though, especially

MEAT AND GREET

Doom's cast of pensive, pissed characters is growing. Get to know 'em early



KHAN MAYKR
Stubborn being bound to lead the planet Urdak.



THE BETRAYER
Doomguy's former coworker, who's banished to hell.



DEAG NILOX
Hell Priest in charge of invasion of Earth. Has a fortress.



DEAG RANAK
Hell Priest chilling until the Age of Rapture kicks in.



DEAG GRAV
Top Hell Priest, shitty boss and pompous ass.

with how these fights scale up so quickly. It hits *Doom 2016* endgame stuff from pretty early on, and then surpasses that benchmark, adding tougher demons and even more waves and wild configurations of them, and then surpasses that mark again and again. The dash is essential for dodging projectiles, but even more so for map awareness. Dashing out of the fray and to a decent vantage point gets you a split second to see what you're up against, and any chance to prioritise a target makes a big difference.

The arenas jive with the expanded mobility for a more expressive combat experience than *2016*. If I want to do it, I probably can, as if there's an uninterrupted circuit between my brain, the mouse and keyboard, and the Doomguy. It's why getting stuck on

Doom's occasionally jagged hell-geometry is such a momentum killer.

Between the variable difficulties – I pushed through on Ultra-Violence – and optional salves like Sentinel Armour and extra lives that help remove friction with temporary buffs and instant respawns, *Doom Eternal* did an excellent job pushing me just beyond my limit without burning me out, despite the occasional unfair death.

SHOOTER HEAVEN

If there was any downtime in *Doom Eternal*, it was because I stopped between fights to soak in the scale and majesty of its vistas. Demons as tall as skyscrapers carrying hell barges around on their backs, swarms of dozens of

cacodemons like gnats in the distance, ancient sentinel castles climbing mossy mountains into the clouds – *Doom* is a full on high-fantasy world now, pages and pages of optional lore included.

Some of the humour is dulled as a result, but I still laugh every time I hear the pop of a cacodemon's eye getting ripped from the socket. Besides, *Doom* taking itself this seriously feels like a joke of its own.

Doom Eternal feels like it was made for the PC first, too. I had zero hiccups during my 15-hour playthrough. No crashes, no hitching, and I didn't have to bump a single setting down to get my framerate above 120 fps at 1440p. Granted, I have a juicy rig, but I'm still used to playing with post-processing junk to inch my fps higher. Our performance review shows *Doom Eternal* maxed out and maintaining 60 fps at 1080p on a GTX 1650. *Doom* is seriously an industry standout in this regard.

Anything less than perfect performance wouldn't do, because *Doom Eternal* is one of the most demanding arena shooters I've ever played, a game that hones every muscle memory committed to my right forearm and left hand fingertips since they graced a mouse and keyboard. It's bright and loud, hyper violent yet tastefully refined, and absolutely draining. I can't recall playing a shooter where sensory overload was one of the most common reasons for death. ■



PC GAMER VERDICT

A ceaseless, panicked nightmare that pushes you to point-and-click with more skill and style than ever before.

94

SPIRITED AWAY

Seems like Evil Edna's cast a spell on **ORI AND THE WILL OF THE WISPS**. By Tyler Wilde

Sequel *Ori and the Will of the Wisps* is a much larger and more complex metroidvania than *Ori and the Blind Forest*, and as a result, it can be sloppier. Bugs and inconsistencies frustrated me along the way, especially as I had no guides to help. But *Will of the Wisps* is also one of the best-looking 2D games ever made, and navigating it feels fantastic – its physics are just right, so leaping and dashing through it is just intrinsically fun.

It's not just the map and story that's bigger. The combat is much more involved than it was in *Blind Forest* – though still isn't great. It's hard to see what's going on through all the visual noise, and Ori's own sword combos can obscure enemy animations. I got tired of fighting the same old enemy types, so I'd cheese them where I could – hopping around above them sometimes works – or try to ignore them.

Normal difficulty mode is the way *Will of the Wisps* is 'meant' to be played according to the menu, and the ultra-hard escape sequences are part of what I liked about the last game. It feels awfully good to vaporise all the crawling things in half the time on easy mode, though. Fighting the same handful of enemy types for ten-plus hours is not what makes *Ori* fun.

It's about the platforming, and the basic jumping, double-jumping, and dashing is precise and super satisfying, just like it was in *Ori and the Blind Forest*. You can launch a glowing energy rope at hooks and

sling yourself into the air, chaining grapples like Spider-Man. You can freeze time when you're next to a projectile and then launch it and yourself in opposite directions, bouncing between glowing bullets as if you're ricocheting off them. There are many places to stop and rest, but you rarely have to give up any speed if you don't want to.

Nothing else looks quite like the Ori games do in motion

WILL POWERS

With ten areas, there are a ton of special movement abilities and puzzle types, some more successful than others. Diving into sand pits and bouncing around like a pinball before shooting back out like a sandworm from *Dune* is brilliant. The bits that take after *Portal*, meanwhile, are disappointing. They don't play much with momentum and, for the most part, you just go in one blue hole and out another. But even the bits that are only so-so usually feel great to clear – like flawlessly running through an ultra-hard *Guitar Hero* song.

The locations are all stunning, too, and there's the standard variety,

including the obligatory snow and water levels. That's not to say they're generic. Nothing else looks quite like the *Ori* games do in motion.

And like *Ori and the Blind Forest*, *Will of the Wisps* is on a mission to pull both delight and sadness out of even the most determined grumps. This one does a better job of it, with multiple characters that put in more effort to endear themselves. The end may well induce some sniffing depending on your disposition.

If the sentimental stuff doesn't land for you, it might be because you're still fuming over the boss fights and escape scenes by the time you get to the end. Some of them can be seriously annoying, especially when the visual information you're getting just isn't clear, and you don't know what you're meant to do. But I like the escapes better than the traditional boss fights with their big health bars. Clearing them is satisfying, but in the way it would also be satisfying to stop punching yourself after a prolonged period of punching yourself.

Take *Will of the Wisps* at a relaxed pace, though, and you'll collect lots of spirit money to upgrade Ori's abilities with. Hunting down energy and life cells throughout the world also makes things easier, so that if a boss is frustrating, at least you can go away and improve the math in your favour.

Ori and the Blind Forest is fantastic for its compactness and simplicity, but *Ori and the Will of the Wisps* is also worth playing to the end – though it'll take much longer. It trips over its size and complexity at times, and really doesn't need so much combat, but it's gorgeous and funny, and the triple-jumping could go on forever without getting old. ■

NEED TO KNOW

WHAT IS IT?
A giant 2D world full of abilities to unlock, tricky platforming segments, puzzles, and boss fights

EXPECT TO PAY
£25

DEVELOPER
Moon Studios

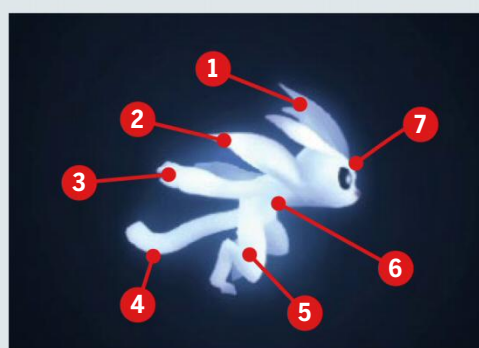
PUBLISHER
Xbox Game Studios

REVIEWED ON
Windows 10, Core i7-6700K, 16GB RAM, GeForce GTX 980

MULTIPLAYER
None

LINK
orithegame.com

ANATOMY OF ORI Um... what are you, buddy?



- 1 Floppy ears
- 2 More ears?
- 3 Naruto arms
- 4 Tail
- 5 Powerful legs
- 6 Internal organs such as friendship and being nice
- 7 Determination



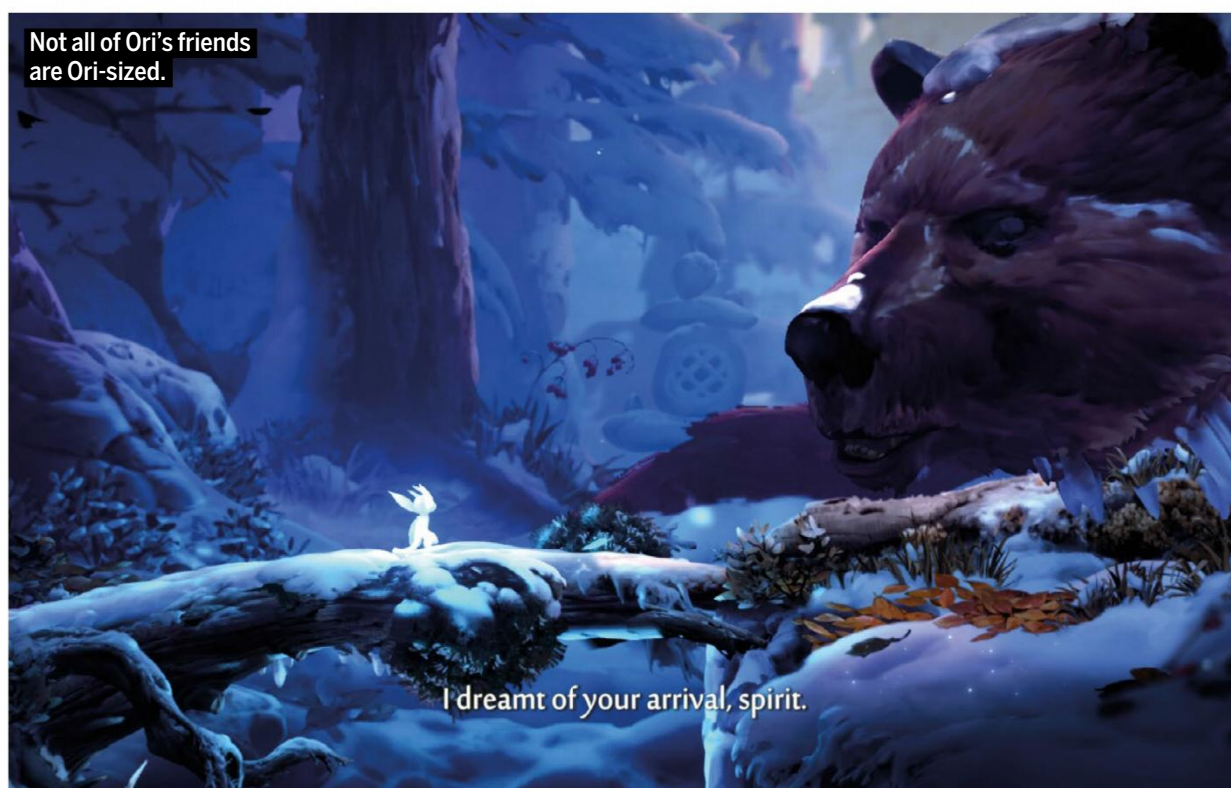
PC GAMER VERDICT

Ori and the Will of the Wisps can be annoying, but it's gorgeous, and the super-precise platforming is fantastic.

81

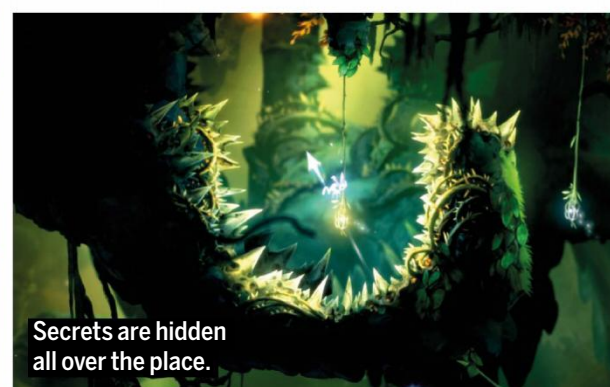


A big happy family that nothing bad will happen to.



Not all of Ori's friends are Ori-sized.

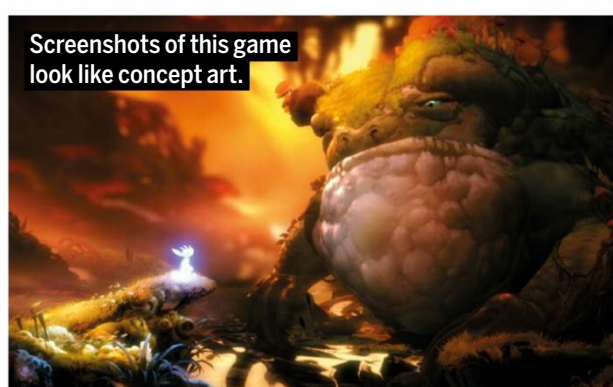
I dreamt of your arrival, spirit.



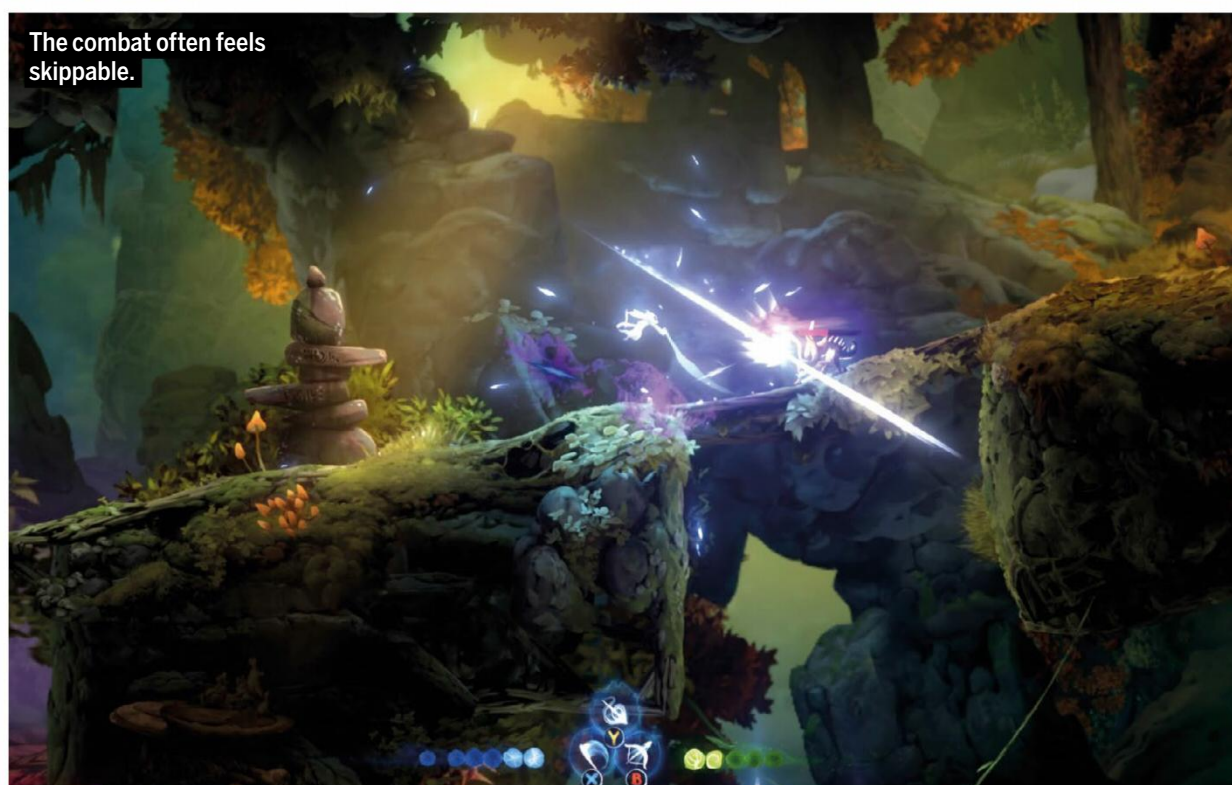
Secrets are hidden all over the place.



The combat often feels skippable.



Screenshots of this game look like concept art.



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BACK TO BLACK

BLACK MESA is an incredible fan remake of Half-Life, and is now the best way to experience Gordon Freeman's first adventure. *By Andy Kelly*

One morning, a 27-year-old theoretical physicist turns up late for work and the next thing he knows monsters are spilling out of portals from another world. The *Half-Life* series is really just one long bad day at work, and *Black Mesa* is a Valve-approved, albeit entirely fan-made, chance to relive Gordon Freeman's disastrous morning – but with prettier visuals, combat and physics lifted from *Half-Life 2*, bigger levels, and other upgrades.

Black Mesa sticks closely to *Half-Life* in terms of structure. You take the tram into work, watch in horror as the resonance cascade floods the facility with aliens, dodge headcrabs in the office complex, clash with the HECU Marines, deal with giant tentacles in the blast pit, fight through a warzone on the surface, navigate the radioactive Lambda Core, and finally visit Xen. But everything is bigger, more detailed, and more dramatic, with production values in line with *Half-Life 2* (if not quite as high), which breathes new life into the Black Mesa Incident.

Some levels have been remixed too, with redesigned, or in some cases completely new, puzzles and set-pieces. So even if you know *Half-Life* inside out, there'll still be some surprises here. However, purists may question some of developer Crowbar Collective's design and aesthetic choices – and some things are so detached from the source material that it occasionally feels like an entirely new game. *Black Mesa* is not a 1:1 remake, so it'll never feel as authentic as revisiting the original. But it's a fresh, modern, and lovingly made take on a landmark moment in PC gaming.

Half-Life is still great, but feels increasingly stiff and dated as the years roll relentlessly on. But *Black Mesa* being built on the foundations of *Half-Life 2*, borrowing its weapon handling and chaotic physics simulation, makes for a much more dynamic and engaging first-person shooter. And thanks to an abundance of movable and breakable objects,

and devilish traps that can cause explosive chain reactions, the stricken research facility has never felt more reactive or dangerous.

But let's talk about Xen, because this is where *Black Mesa* makes its biggest statement. In the original *Half-Life*, Freeman's arrival on Xen was, for most players, something of an anticlimax. It's not as bad as people remember, but this otherworldly expanse of floating platforms,

bizarre alien flora, and grubby textures is a low point for the game. But after years in development and

It's almost comical how much of an improvement this is

NEED TO KNOW

WHAT IS IT?
A fan-made *Half-Life* remake

EXPECT TO PAY
£15

DEVELOPER
Crowbar Collective

PUBLISHER
In-house

REVIEWED ON
RTX 2080 Super, Intel i7-9700K, 16GB RAM

MULTIPLAYER
Deathmatch

LINK
crowbarcollective.com

several delays, *Black Mesa* achieves the impossible and makes Xen one of the best parts of the game.

FEELING XEN

The new Xen is stunning to look at, and feels genuinely strange and otherworldly – as this cosmic place-between-places should. Comparing both versions of Xen side by side, it's almost comical how much of an improvement this is. What was once a rather lifeless, dreary place now sizzles with colour and detail.

The new Xen levels loosely follow the original game in terms of theme and structure, but they're also a radical departure. The platforming is more fun and dramatic, and there's a lot more to discover in terms of world-building and environmental storytelling. Some locations have even been transformed entirely. In the Interloper chapter, Freeman encounters enslaved Vortigaunts in a factory-like cloning facility; however, in *Black Mesa* this section has been replaced by a bigger, much more evocative new location that really highlights the true misery of the Vorts' enslavement.

It's amazing that something as elaborate and well made as *Black Mesa* is, essentially, a fan project. And doubly so that Valve allowed them not just to make it, but sell it on Steam too. This is a professionally made game, and arguably the best way to experience *Half-Life* on a modern gaming PC. For some the original will always be the best, but this is a superb re-imagining that uses the underlying systems of *Half-Life 2* to great effect. Fighting through the Black Mesa facility as it falls to pieces is every bit as thrilling as it was back in 1998, and now the story ends with a bang instead of a whimper. ■

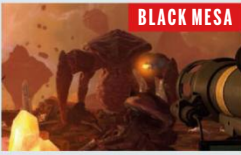
BEFORE AND AFTER

How Black Mesa compares to Half-Life

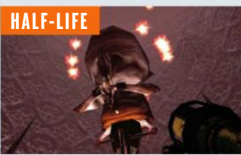
BLACK MESA
The Black Mesa facility is much more detailed in the remake.



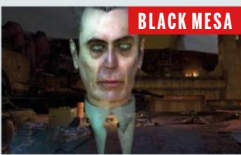
XEN
What was the ugliest part of *Half-Life* is now the prettiest.



NIHILANTH
The game's final boss has had some serious work done too.



G-MAN
Black Mesa uses the *Half-Life 2* version of the freaky G-Man.



PC GAMER

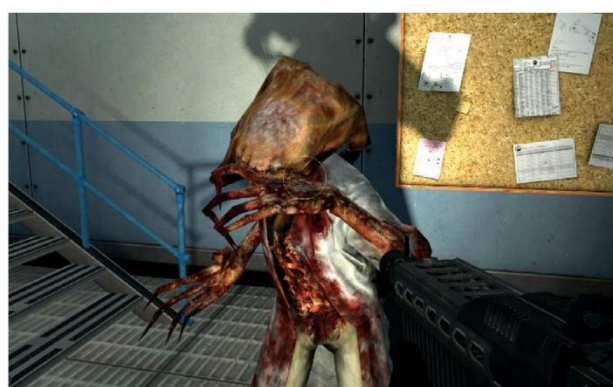
VERDICT

A quality remake that broadens the scope of the original and massively improves its final chapters.

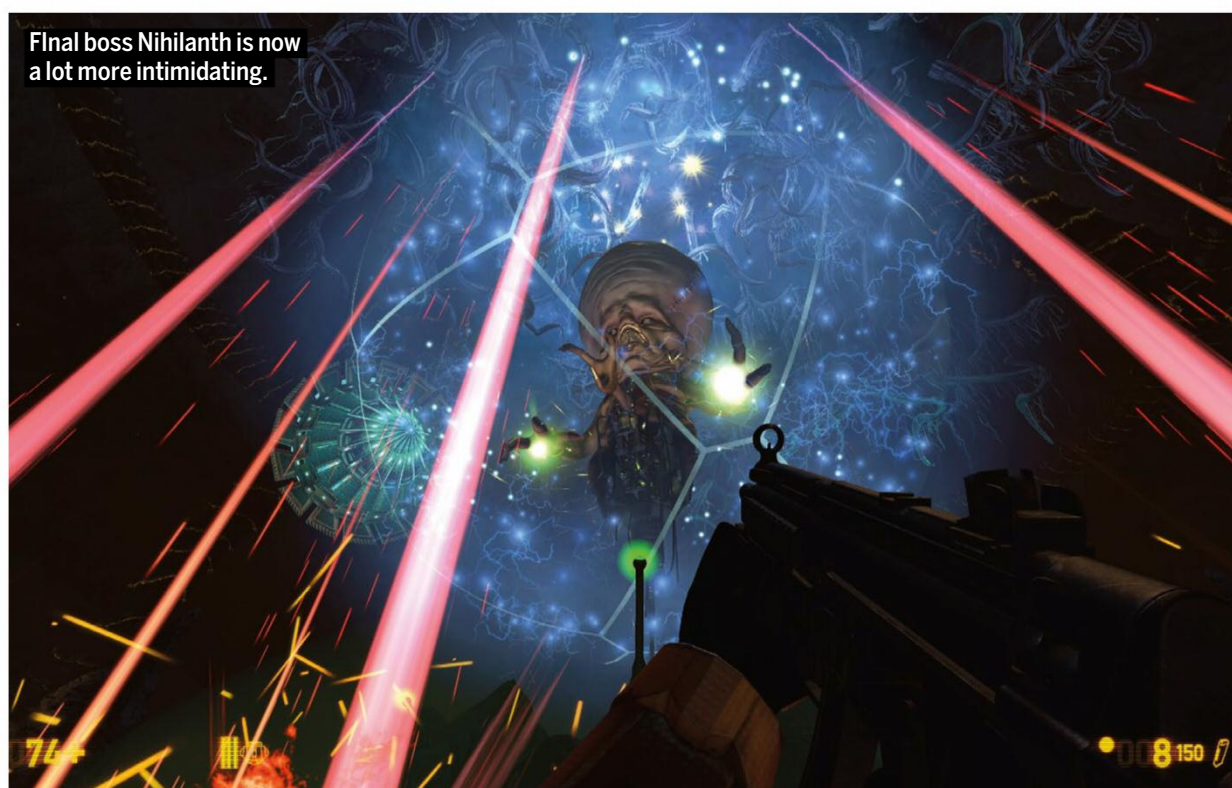
84



A time before the Vortigaunts became Gordon's mates.



Final boss Nihilanth is now a lot more intimidating.



With *HL: Alyx* out, it's a great time to revisit Gordon's first adventure.



Meeting your coworkers on your first day is always awkward.



It's easy to forget that this is an unofficial fan project.

ALYX IN WONDERLAND

Revisiting City 17 in VR is a thrill
in **HALF-LIFE: ALYX**. By Chris Livingston

I played the final three hours of *Half-Life: Alyx* in a single session. Before *Alyx*, I never used VR for more than 30 minutes at a time. I don't get motion sick but I do get generally tired of VR. Tired of wearing a headset, tired of having to stand and stoop and awkwardly reach around. But I didn't even think of taking a break during the final chapters of *Half-Life: Alyx*. I was completely enthralled and unwilling to stop playing.

When I played through the ending (no spoilers here, but trust me, you'll want to keep your VR headset on through the credits), I reloaded my last autosave and played through the ending a second time. And then I went back to the beginning of the game and started playing again. I didn't have much doubt *Half-Life: Alyx* would be a great VR experience – Valve makes its own VR headset and software, after all. But I was sceptical it could also be a great, proper *Half-Life* game, and I was thrilled to discover it really is.

While it's sandwiched between the events of *Half-Life* and *Half-Life 2* the repercussions of its story extend well into whatever future there is for the *Half-Life* series, and its technical accomplishments will leave most other developers, once again, struggling to keep up.

I've seen
Striders before
but I've never
had one step
over me

ON A RAIL

Five years before the events of *Half-Life 2*, Alyx Vance is performing surveillance and recon in the Combine-controlled City 17. It's immediately engaging to be back in City 17 again, so familiar yet so much more impressive in VR, an environment I don't need to just look at and admire but one I can actually run my virtual fingertips across and crane my neck back to take in fully. When a

city scanner takes my picture I instinctively hold my hands up against its blinding camera flash. Combine Metro Cops seem larger than life because they're now actually life-size. I've seen Striders before but I've never had one step over me in VR as I stared up at it, utterly dumbfounded, watching it sink its massive feet into the side of a building, using the crumbling

NEED TO KNOW

WHAT IS IT?
Valve's VR-only shooter which takes place between *Half-Life* and *Half-Life 2*

EXPECT TO PAY
£46.50

DEVELOPER
Valve

PUBLISHER
Valve

REVIEWED ON
i7-9700K @3.60GHz, 16 GB, Nvidia GeForce RTX 2080 8GB, HTC Vive Pro/Valve Index

MULTIPLAYER
No

LINK
half-life.com/en/alyx



masonry as a step to walk itself up to a rooftop. During the opening minutes, and at plenty of times during the entire game, I just had to stop, stand still, and take it all in.

The attention to detail is obvious not just in how the world looks but in the ways you can interact with it. Alyx's disembodied hands react wonderfully to each object in the world, and it's hard not to just stand there admiring the way my virtual fingers close in different ways depending on what I'm holding: curling around a bottle, gently clasping an iron railing, holding a discarded cigarette butt between your thumb and forefinger, gripping an empty water jug by the handle, pulling up the antenna and then gently twisting the tuning knob on a radio. Even discovering I can pick up a marker to scrawl something on a dirty window pane, and then realising I can use an eraser to wipe it off, is delightful. You could very easily spend around 15 minutes just messing around with the physical objects in the starting area, and that's exactly what I did.

Even while dallying, there's a surprisingly brief beginning to the game when compared with *Half-Life*'s opening train ride and *Half-Life 2*'s similarly lengthy stroll through City 17. While there is a jaunt through the city streets and a train ride at the start of *Half-Life: Alyx*, you'll still pretty quickly be holding your first gun and wearing a pair of gravity gloves (or as their inventor Russell likes to call them, Russells) which let you point to an object and yank it through the air and into your hand with a simple and satisfying flick of the wrist. How many objects did I Force-pull to my hand over the course of *Half-Life: Alyx*? Hundreds? A thousand? I don't know, but it never once got old.

APPREHENSION

After the intro you descend into City 17's quarantine zone, a murky labyrinth closed off by walls within

WHO'S NEXT?

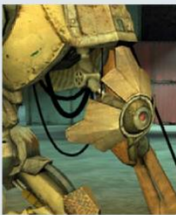
Who should be the protagonist of the next Half-Life game?



HALF-LIFE: KLEINER
Perform teleportation experiments on your loved ones. And you get a nice pet headcrab.



HALF-LIFE: BREEN
A city management game where you work your way up from Combine bootlick to betrayer of the human race.



HALF-LIFE: DOG
You're a giant rampaging robot who can throw cars around and rip Striders' brains out. Cathartic as hell.



HALF-LIFE: BARNACLE
Just stick your tongue out and wait. Something tasty is bound to come along eventually.



HALF-LIFE: G-MAN
You can teleport and stop time, plus all you really do is show up and peer at people when they least expect it.



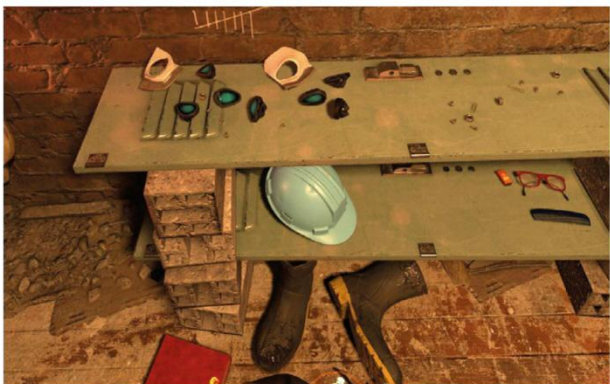
The Combine are as unfriendly as you remember.



Ready to do some climbing?



The Citadel, five years before you blow it to hell.



Looks like this apartment isn't available to rent.



I wasn't hungry anyway.

You can upgrade your pistol with a holo sight.



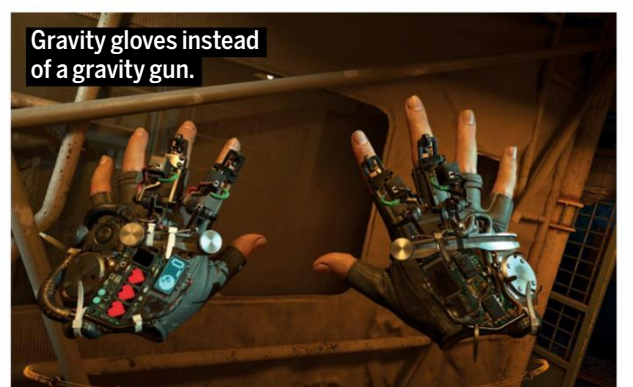
Whatever that is, it looks important.



What I wouldn't give for a trusty crowbar.



Just turn the wheel! How hard could that be?



Gravity gloves instead of a gravity gun.

» the walls of City 17, where most of the game takes place. Your father, Eli, has been captured by the Combine and you're trying to intercept the train he's on by making your way through a Xen infestation that has filled the metro tunnels, dark sewers, and basements of crumbling buildings.

The *Half-Life* series, especially the original, has always been as much about horror as it is about action, and that horror was often gross. Plump, fleshy headcrabs leaping at your face from darkened air ducts, shambling zombies with bloody, elongated claws and gaping midsections suddenly lurching to life, the Gonarch's massive and pendulous testicles swinging as it gallops after you, the giant fetus-like body and swollen cranium of the Nihilanth. Disgusting.

Here in VR the graphic grossness increases by at least a factor of ten. Barnacles with their sticky, dangling tongues belch and barf human remains directly onto me when they expire, giving me another good reason to avoid standing under them. Apartment walls are covered with pulsating tendrils and toothy alien blossoms that gibber and snap at my fingertips if I hover too close. Shiny gas sacks cling to the walls, swelling and inflating when I approach until they rupture and spew noxious particles into the air.

Half-Life: Alyx is gleefully and effectively disgusting, though the grossness does feel a bit much at times.

Progressing through the quarantine zone is slow work, both due to the nature of

movement in VR, the need to search through each room for spare ammo and resin (a resource you can use to upgrade your guns), and the unsettling, spooky, occasionally pitch black environment. Thankfully, jump scares are downright restrained so they never feel cheap. Sure, I yelled when I opened a kitchen cabinet and a dead headcrab rolled onto me, and I jumped a little when a zombie thumped a hand against a window I walked by, but these scares don't happen as often as they could and the horror strikes a fair balance between tension, dread, and startling "Oh shit!" moments.

SURFACE TENSION

The second half of the game opens up into the more dynamic types of

KILLER APPS

If you bought VR gear just for *Half-Life: Alyx*, here's what to play next



BEAT SABER
A tremendously fun musical rhythm game that might be almost impossible to stop playing.



TETRIS EFFECT
It's a remarkable re-imagining of the classic game, and it is just perfect in virtual reality.



SUPERHOT
A creative and challenging shooter where bullets only move when you do. Can be tricky.



ASGARD'S WRATH
This is a massive and ambitious RPG you can spend dozens of hours on.



NO MAN'S SKY
An endless procedurally generated universe at your virtual fingertips.

combat encounters I loved from earlier *Half-Life* games. Antlions are also infesting the quarantine zone and they're much more fun to fight than headcrabs and zombies – faster, alarmingly huge, and much more directly aggressive. Combine soldiers begin showing up more often in the second half of the game, too, both to fight you and the antlions. After hours of slowly creeping through the early sewers and basements you can finally freely navigate the environment, take cover, displace, and by coming across a fight already in progress, plan your assault by using a grenade or explosive barrel to conserve ammo. The nature of VR

movement means you're not exactly strafing around at full speed and these fights are usually pretty brief, but they're still extremely fun, chaotic, and challenging.

Unlike Gordon Freeman, Alyx Vance

does not have a massive arsenal to deal with her enemies. In addition to a standard pistol you'll eventually acquire a shotgun and a Combine pulse rifle. The guns each have a different method of reloading which makes them enjoyably distinct. Eject a spent mag from your pistol, grab another from your backpack or use your gravity gloves to yank one into your hand, slap it home, and click the slide into place. The shotgun breaks open allowing you to shove in fresh shells two at a time before snapping it closed again with an upward hand movement. The Combine pulse pistol loads ammo pods from a side feeder and a quick sideways flip of the wrist snaps it shut again. These actions remain satisfying to perform, especially during a mad scramble as

antlions and headcrabs scuttle toward you or Combine soldiers try to flank your position.

UNFORESEEN CONSEQUENCES

I played through *Half-Life: Alyx* using the HTC Vive Pro, and then spent a few more hours replaying it with a Valve Index. (It's worth mentioning that the version I played was still being patched on a daily basis by Valve to improve performance and fix bugs.) Apart from a single crash to desktop, and one quicksave that wouldn't reload, I didn't experience much in the way of technical issues. Both headsets provided a smooth experience with all performance settings on high with my Nvidia GeForce RTX 2080.

Half-Life: Alyx took me roughly 13 hours to complete, and while the slow and measured pace and claustrophobic setting of the first half felt occasionally stifling, the second half flew by as the intrigue of the story took its hold and the combat got far more exciting, varied, and excellently fast-paced.

The ending is, frankly, wonderful, surprising, exciting, not to mention more than a bit puzzling when you really stop to think about it. I'm eager to see *Half-Life* fans react and dissect and discuss it, as I'm sure they will for months afterwards, and it makes all sorts of follow-ups to *Half-Life: Alyx* seem possible. I just fervently hope whatever that follow-up is, that Valve (please, please) doesn't make us wait another 13 years for it. ■

PC GAMER VERDICT

Valve has created both a technically impressive VR experience and another memorable *Half-Life* game.

92

KNIVES IN

THE WALKING DEAD: SAINTS & SINNERS is anything but braindead. *By Rick Lane*

Here's what's likely to happen the first time you kill a zombie in this VR-exclusive survival horror game. You'll get in close to the approaching walker, knife-in-hand. As it lunges for you, you'll try to stab it in the head, but the blade will glance off. You'll start to panic, jabbing wildly. Out of desperation, you'll pull your arm back so far your shoulder creaks, and thrust the blade forward, finally splattering through flesh and bone.

Saints & Sinners' nuanced simulation of knife/skull action is as remarkable as it is harrowing. Not only does it make each zombie encounter surprisingly unique (and also fraught with apprehension) it also effectively communicates your personal journey as a survivor in The Walking Dead's world. After the messy horror of that first kill, you'll be buzzing with nervous adrenaline, certain the odds are impossibly stacked against you. Over time, however, you'll learn how to efficiently dispatch the walkers, leading with your off-hand to keep them at bay, perfecting the arc of your swing and getting access to bigger, nastier melee weapons too.

DEADLY SINS

This one mechanic is probably enough to carry *Saints & Sinners* on its own. But it's only a small part of

the most mechanically rich VR game I've played yet. Set in New Orleans, it sees you play as a nameless survivor known as 'the tourist' on the trail of a military bunker called the Reserve. From your base located inside a

cemetery, each new day sees you venture out to a different district of the city to complete a specific objective, such as retrieving parts to fix a radio, or collecting 'intel' from inside a faction base. At the

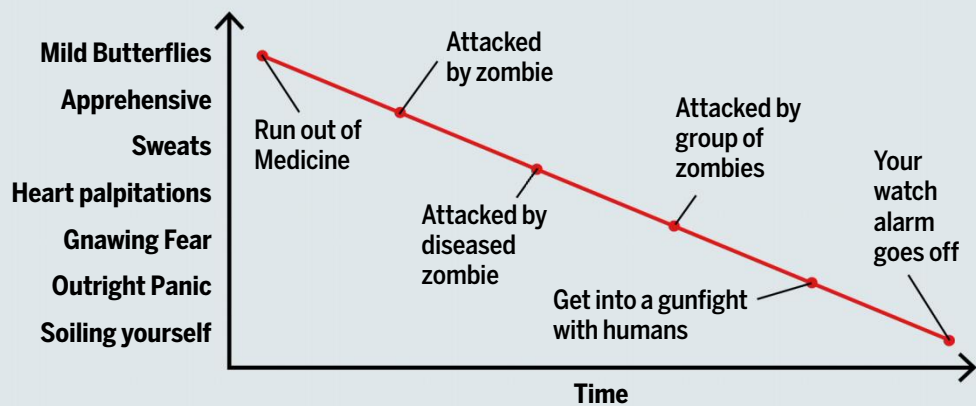
same time, you also need to scavenge whatever resources you can from the environment, grabbing everything from broken guns to discarded shoes and bringing them home to craft new weapons and equipment.

Saints & Sinners builds its game upon solid VR foundations. Most interactions have been thought about with the same care and attention as the melee combat. If you're injured, you'll need to wrap a bandage around

A scintillating tension engine where every decision matters

PANIC STATIONS

Saints and Sinners is a game largely about managing your worries. Here we chart the game's most anxious moments



NEED TO KNOW

WHAT IS IT?
Anxiety-inducing VR zombie survival game

EXPECT TO PAY
£31

DEVELOPER
kydance Interactive

PUBLISHER
In-house

REVIEWED ON
AMD Ryzen 5 3600,
Nvidia Geforce RTX
2080 Super, 32GB RAM,
Oculus Quest (via
Oculus Link).

MULTIPLAYER
No

LINK
vrwalkingdead.com

your arm to restore health, while you can 'disguise' yourself from the zombies by pulling out their guts and rubbing them on your clothes. Ranged weapons are also pleasingly represented, with authentic reloading mechanisms for revolvers, double-barrelled shotguns, and so forth.

What elevates *Saints and Sinners* above other VR games, however, is how these individual interactions are baked into a longer experience featuring both a decent story and, more importantly, overarching game systems. Every day the available supplies in the world dwindle, while the number of zombies shuffling around increases. This long-term issue exists in direct conflict with shorter-term dilemmas. When you're out in the world, you have roughly half-an-hour before the Tower rings every church bell in the city, causing the streets to swarm with zombies. You don't want to be around when this happens, so you can't be too picky about the resources you collect.

The result is a scintillating tension engine where every moment-to-moment decision you make matters. There are set moral choices in the game too, such as choosing whether to help a guard from one human faction rescue his brother from another. Alternatively, you could kill the brother yourself and help his captors take out the others. Yet while these choices impact the overall direction of the story, they're far more of an aside compared to Telltale's narrative adventure.

Nonetheless, *Saints & Sinners* is a superb VR title, easily my favourite VR game since *Superhot*. If you reluctantly bought a VR headset for *Half-Life: Alyx*, play this on it too and feel a bit less bad about your expensive impulse purchase. ■

PC GAMER

VERDICT

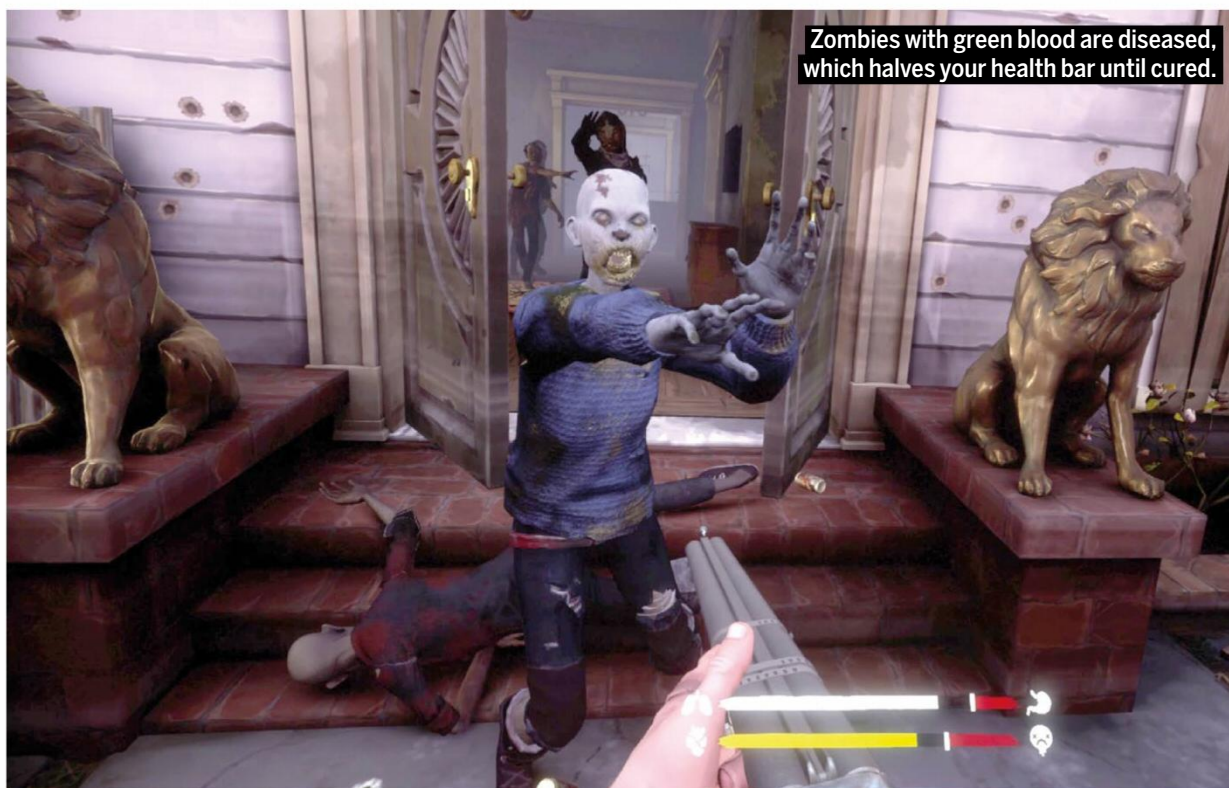
Tense and thrilling with finely tuned systems, *Saints & Sinners* is a must-have VR experience.

88

For goodness sake,
wait your turn!



Zombies with green blood are diseased,
which halves your health bar until cured.



Sometimes the blade doesn't go in.
Other times, it doesn't come out.



Occasionally you'll find other lone
survivors. Helping them results in rewards.



When your watch alarm goes
off, it's time to bug out.



CLUELESS

THE SUICIDE OF RACHEL FOSTER is a mystery that lacks compassion. *By Rachel Watts*

Walking sims have carved their own corner in games. Their focus on telling stories through engaging environments gives diverse and personal topics the space they need to be fully explored. *The Suicide of Rachel Foster's* eerie hotel looks like the perfect stage for such an experience, and its story of a young woman having to uncover the truth of her past in the decaying building is an interesting hook.

But where thoughtful storytelling elevated the walking sims that influenced it so heavily, *The Suicide of Rachel Foster* falls short. What begins as a compelling ghost story turns quickly into a melodramatic soap opera that churns sensitive topics like suicide, child grooming, and teenage pregnancy into baseless drama to the point where it's just plain gross.

In *The Suicide of Rachel Foster*, you play as Nicole, a young woman who is returning to her parents' old, empty hotel in the middle of the Montana wilderness. Following the advice of her deceased mother, Nicole hopes to survey the decaying hotel, called The Timberland, and then sell it, determined to finally be free of the hotel and its secrets. Ten years prior, Nicole and her mother fled the hotel after finding out that her father had an intimate relationship with a teenager, Rachel Foster, who subsequently took her own life.

The first half of *Rachel Foster's* total four hours I enjoyed. It focuses less on investigating the hotel's history and more on the challenge of navigating this huge space. Thankfully, you're not completely alone. Nicole has a handy radiotelephone with a direct line to a FEMA agent called Irving, who gives you survival tips like the location of the pantry for food. The two characters begin a little salty but soon become friendly with each other, and I found myself really enjoying their playful banter. Irving became a friendly voice that warmed the Timberland's creepy corridors.

The Timberland hotel is a sprawling, decaying mass of multiple floors with dozens of rooms, hallways, secret passageways and crawl spaces. You go from being scared about what's around the

corner of a narrow corridor, to massive ballrooms, dining halls, kitchens, and lounge areas where anything could be lurking.

I felt like it was heading more in the direction of a ghost story than a mystery,

which I was somewhat looking forward to. However, rummaging through Nicole's belongings and unearthing the history of the hotel is where Rachel Foster gets problematic. As the second half of the game begins to delve into the details about Nicole's father and Rachel's relationship, it becomes clear that One-O-One Games is treading into territory that it is not equipped to handle. It's then revealed that Rachel was nine weeks pregnant when she died and there are clues that indicate

I felt like it was heading more in the direction of a ghost story than a mystery

NEED TO KNOW

WHAT IS IT?
A mystery game about a woman uncovering her past in a huge hotel

EXPECT TO PAY
£15

DEVELOPER
One-O-One Games

PUBLISHER
Daedalic Entertainment

REVIEWED ON
GTX 1080Ti, Intel i7-8086K, 16GB RAM

MULTIPLAYER
No
LINK
tsorf.games

she was groomed by Nicole's father from a young age.

The relationship is even more worrying because it's seen as romantic. An attic with fairy lights hangs above a bed where sketches of the teenager posing naked lie scattered on top. There's a line where Rachel is described as 'mature for her age' as if it's some sort of excuse to her father's relationship with the teenager. It made me cringe, especially as the game's marketing focuses on Rachel's retainer, an object that emphasises how young she is.

FOSTERING RESENTMENT

The most damaging aspect of how the game frames this relationship is that Rachel has no voice throughout the entire game. For a character whose name is in the title of the game, I know very little about her. No letters, no flashbacks, no pages from a diary, nothing that attempts at giving her any voice. I barely know anything about this character apart from the fact that she was groomed starting when she was young, got pregnant by a man three times her age, and then took her own life. Rachel's story is not melancholic as the game represents it, it's just irresponsible.

The Suicide of Rachel Foster uses these issues as nothing more than storytelling plot points, further emphasised with an ending that places the player in the deeply uncomfortable position of confronting suicide even more directly. The ending that I had, and to my understanding there are several, sensationalises a complex issue. The Timberland hotel and its characters make for a compelling setup but then spirals into tasteless drama, lacking any sort of compassion for the sensitive topics it covers. ■

FURTHER INFORMATION

If you're struggling, help is out there

If you're affected by any of the issues addressed you can contact the Samaritans on 116 123 in the UK and Ireland or email jo@samaritans.org or jo@samaritans.ie.

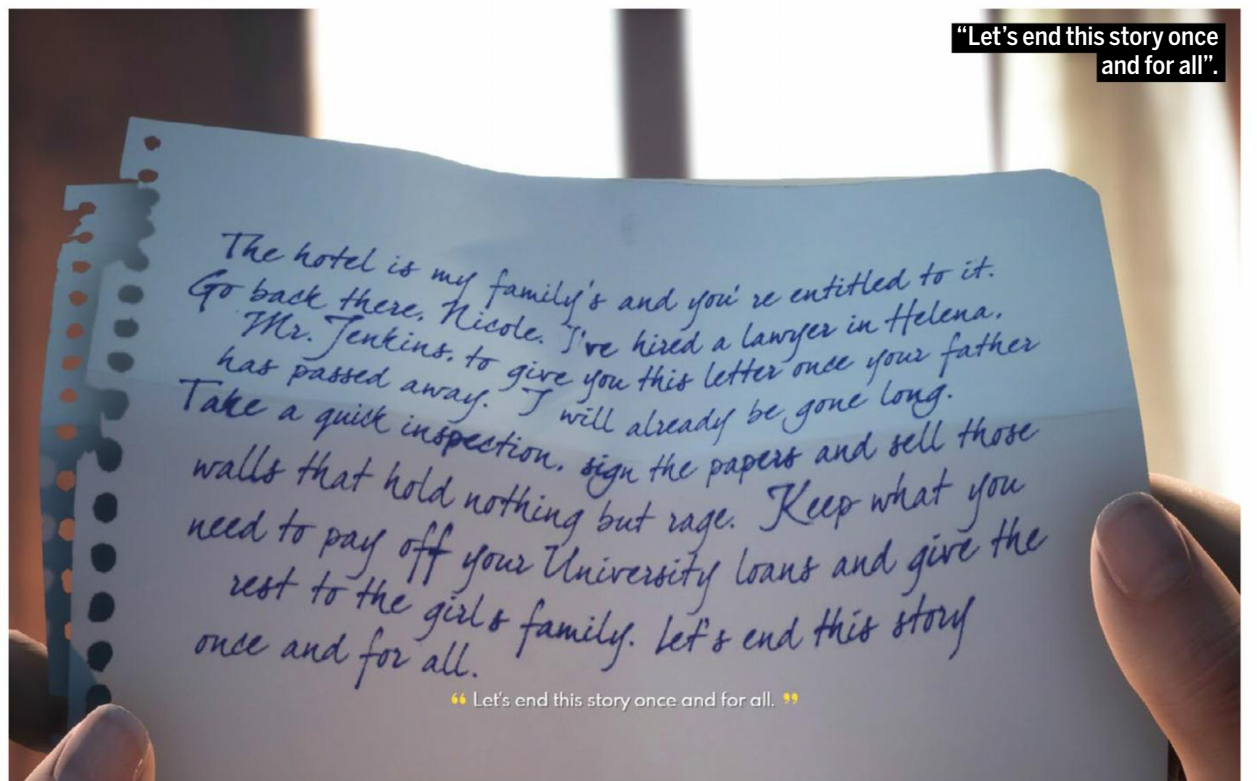
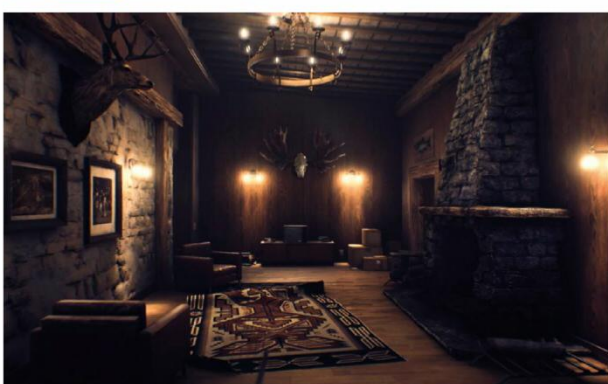
In the US, the National Suicide Prevention Lifeline is 1-800-273-8255. You can find other international helplines at www.befrienders.org.



PC GAMER VERDICT

Rachel Foster builds a haunting hotel, but fills it with an insensitive story ill-equipped to deal with mature subjects.

40



UNIT-ED STATES

CORRUPTION 2029 is smartly designed, but lacks flavour. *By Tom Hatfield*

Now here's a surprise, a new game from the creators of *Mutant Year Zero: The Road to Eden*, announced and released in under two weeks. I'm not sure what's more surprising – that developer The Bearded Ladies would drop a new game with next to no warning, or that they've made another stealthy turn-based tactics game that isn't a *Mutant Year Zero* sequel. Instead, it's something new in setting, yet familiar in play style.

Corruption 2029 is set in a dystopian semi-post-apocalyptic America, split into a forever war between two indistinguishable factions: the enemy NAC (New American Council) and the player-aligned UPA (United Peoples of America). These wars are fought between 'units', soldiers that have been so heavily cybernetically augmented that they have seemingly lost all free will and are controlled remotely by drone-piloting commanders. It's a neat little meta commentary on the concept of the strategy game, but that's unfortunately about the closest the setting gets to being interesting.

There's a real lack of personality here, especially compared to *Mutant Year Zero*, whose cast of loveable anthropomorphic weirdos were far more memorable. Even by the standards of *XCOM*, *Corruption* is wanting, with no visual customisations, no permanent levelling choices, and no permanent

death, the units are as interchangeable and unmemorable as the fiction states they are. The environments are equally underwhelming, with the same handful of locations re-used for

multiple missions, and you'll find yourself repeatedly raiding the same motel over and over. It gives the impression this entire continent-spanning war is actually being fought in a single one-horse town.

All of which is a shame, because once you dig into the tactical toolbox on offer, you'll find a lot of fun toys to play with. Each level has two distinct phases – units can wander around in real-time so long as they aren't seen, then drop into turn-based combat to fight. The first half of the level is spent carefully picking off stray enemies using silenced weapons. The second occurs when you've finally run out of soft targets and have to fight the main enemy force out in the open. Again this is very *Mutant Year*

You'll find yourself repeatedly raiding the same motel

NEED TO KNOW

- WHAT IS IT?**
A hybrid of real-time stealth and turn-based tactical combat
- EXPECT TO PAY**
£16
- DEVELOPER**
The Bearded Ladies
- PUBLISHER**
In-house
- REVIEWED ON**
Intel i5, 16gb RAM, Nvidia GTX 1660
- MULTIPLAYER**
No
- LINK**
bit.ly/3akwVru

Zero, but the balance here is strong and you rarely manage to take out all of the enemies via stealth – there's always a fight in there somewhere.

YEAR ONE

Much of this first phase becomes an intricate dance where you carefully figure out just how to inflict the perfect amount of damage so that the enemy gets taken out before anyone notices. Weaker enemies can be killed by the handful of silenced weapons on offer, but tougher ones require tricks – maybe you can lure them out of range of their allies, where louder weapons can be used, or perhaps you can hit them with a stun attack to get a precious second turn of silent shooting.

Inevitably though this stealthy setup will break down, or you'll simply hit an enemy you can't pick off, and you'll have to go loud and start a regular turn-based tactical fight. Here, showier abilities come into play, carefully doled out over the course of the campaign. My favourite, one of the first available, is a bionic leap that can launch a unit across the battlefield and onto rooftops. Land on top of an enemy and you'll knock them out of cover. Place it just right and you can knock them off a rooftop, scoring a kill without firing a shot. Others include shots that freeze enemies in place, charge moves, and a large variety of passive stat boosts.

I'd really love to know how *Corruption 2029* came to be. It feels like a very stripped down, bare bones game for the designers to experiment with concepts in the turn-based tactics space. Fans of *Mutant Year Zero* might want to check it out for another dose of turn-based stealth tactics, but anyone else should opt for its more illustrious predecessor. ■

PC GAMER

VERDICT

Corruption 2029 has lots of fun turn-based tactical shenanigans, but in a rather drab and simplistic wrapper.

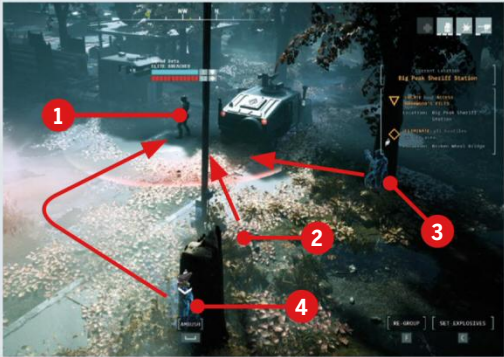
68

ANATOMY OF A TAKEDOWN

How to use teamwork to take down an impossible foe

1 This enemy has 1 armour and 12 health, far too tough for our silenced weapons, how do we take them out?

2 Our scout hits them with a silenced shot for 3 damage (after armour).



3 Shotgun guy uses a backup silenced pistol for 3 more silent damage.

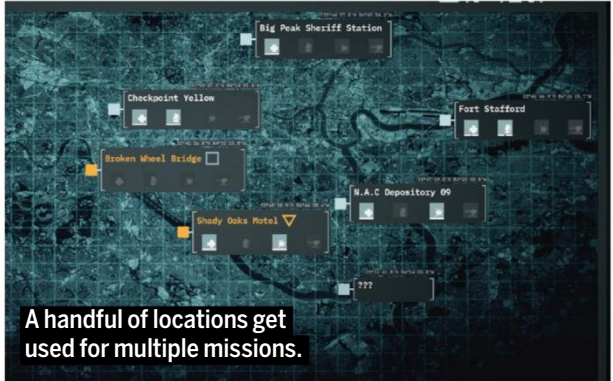
4 The sniper uses a charge move to stun the enemy, giving us a second turn of shooting. 6 more damage – he's finally dead!



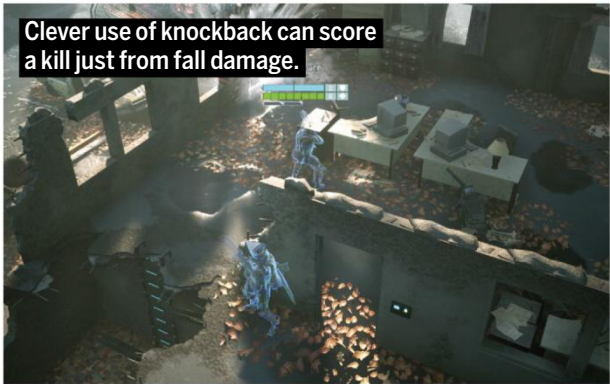
The humble silent pistol is one of the most useful weapons in the game.



The minigun is not a stealth option.



A handful of locations get used for multiple missions.



Clever use of knockback can score a kill just from fall damage.



Shotguns fire in a cone template and do tons of knockback.

FETCHEZ LA VACHE

Engineer your own downfall
in **BESIEGE**. By Rick Lane

From *Crazy Machines* to *Kerbal Space Program*, gaming enables players to indulge their inner crackpot scientist, constructing wildly ambitious contraptions before scratching their heads and muttering “a little more hydrazine” at the resulting mound of slag left over from when their masterpiece exploded.

Whereas *Kerbal* is a feast of fudged rocket science, *Besiege* is more like engineering tapas, breaking its challenge down into tiny, tasty morsels.

In a premise that’s vaguely reminiscent of *Dungeon Keeper*, *Besiege* points you toward a perfectly nice fantasy realm and orders you to ruin it. Only instead of building dungeons, you’re building siege weapons. This realm is split into four separate kingdoms, each of which comprises around a dozen individual levels. The levels are beautifully presented dioramas of death, with a handful of environmental details delicately painted onto a plain, blueish background. Each stage presents you with a simple objective, starting with destroying a house.

Besiege’s toolkit is less intimidating than that of *Kerbal*, featuring an intuitive, Lego-like construction system that lets you hammer out the basic frame of your siege weapon in seconds. This is good, because *Besiege*’s tutorial is somewhat lacking. It provides some guidance on how to build a basic buggy, but that’s pretty much it, while its guide on how to create a steerable vehicle is actually the worst way of doing it.

Fortunately, this doesn’t matter too much, as the best and funniest way of learning in *Besiege* is through failure. The various objects and materials you work with mirror real-life physics. Wood may seem like a sturdy construction material in theory, but when building a three-storey high catapult, dead trees get surprisingly bendy. When your trebuchet wobbles into position like a Saturday-night drunk, you soon realise it’s a good idea to shore-up your constructions with metal braces. The toolkit boasts a broad range of

objects. Alongside all the weapons you can festoon your machine with, there are ropes and winches for constructing cranes, propellers and wings for building flying machines, even tools for automation and

programming. *Besiege* also lets you tinker with the parameters of these objects at just the right level of depth: adjusting the ‘speed’ of wheels, the power of cannons and assigning actions to individual key-bindings.

While the title implies a focus on the destruction of fortifications, the objectives you’ll face in the campaign are more varied than that. One level could require you to cut down a farmer’s crops, while another might involve stealing a crystal. In this way, it constantly pushes you into coming up with new contraptions.

The best and funniest way of learning in *Besiege* is through failure

NEED TO KNOW

WHAT IS IT?

A construction game about building siege engines and smashing stuff

EXPECT TO PAY

£7

DEVELOPER

Spiderling Studios

PUBLISHER

In-house

REVIEWED ON

AMD Ryzen 5 3600, Nvidia GeForce RTX 2080 Super, 32GB RAM

MULTIPLAYER

Competitive and co-op

LINK

besiege.spiderlingstudios.co.uk

MACHINE LEARNING

Besiege is at its best when it’s encouraging creativity, presenting you with a problem that can be solved in multiple ways. The levels which require you to build a specific type of machine (particularly flying machines) tend to be more frustrating. On some levels, the bounding box of your build space is deliberately restricted, nudging you in a certain direction in a way I found annoying. Fortunately, you can also save machines you’re particularly pleased with and load them up later. This lets you establish a range of blueprints you can tweak to suit a puzzle, useful for quickly solving specific-build challenges.

There are a couple of other minor issues. It would be nice if you could click-and-drag lengths of wood as you would paths in *Planet Coaster*. Not only would this make construction quicker, it would also make editing your contraption easier, as you could adjust sizes without necessarily having to delete and then rebuild entire sections of your machine. The camera can also be finicky sometimes, particularly when you’re trying to line-up shots or work on the underside of your machine.

For a game that costs £7, there’s an impressive amount on offer here. The campaign will keep you occupied for a good 10-20 hours depending on how efficient a builder you are, while the level editor offers unlimited creative potential. It also has a strong multiplayer community, playable both cooperatively and competitively in what essentially amounts to medieval Robot Wars.

If all of that doesn’t sell you on *Besiege*, then I’m not sure what will. All it’s missing is a Craig Charles voiceover pack. ■

STEERING TO VICTORY

Creating steerable vehicles is key in *Besiege*. Here are several different approaches



HINGE STEERING

Here, the front wheels are controlled by adjustable hinges. This is the most flexible steering model, but is hard to control and easily broken.



OPPOSING-FORCE

The inner wheels provide drive, while the outer wheels have opposite turning circles. This gives precise motor control, but the vehicle can only turn while stationary.



TORQUE STEERING

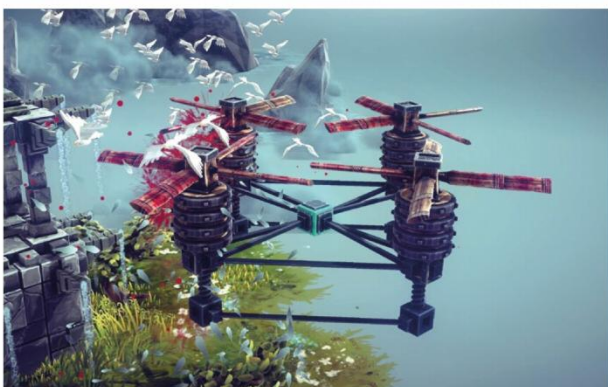
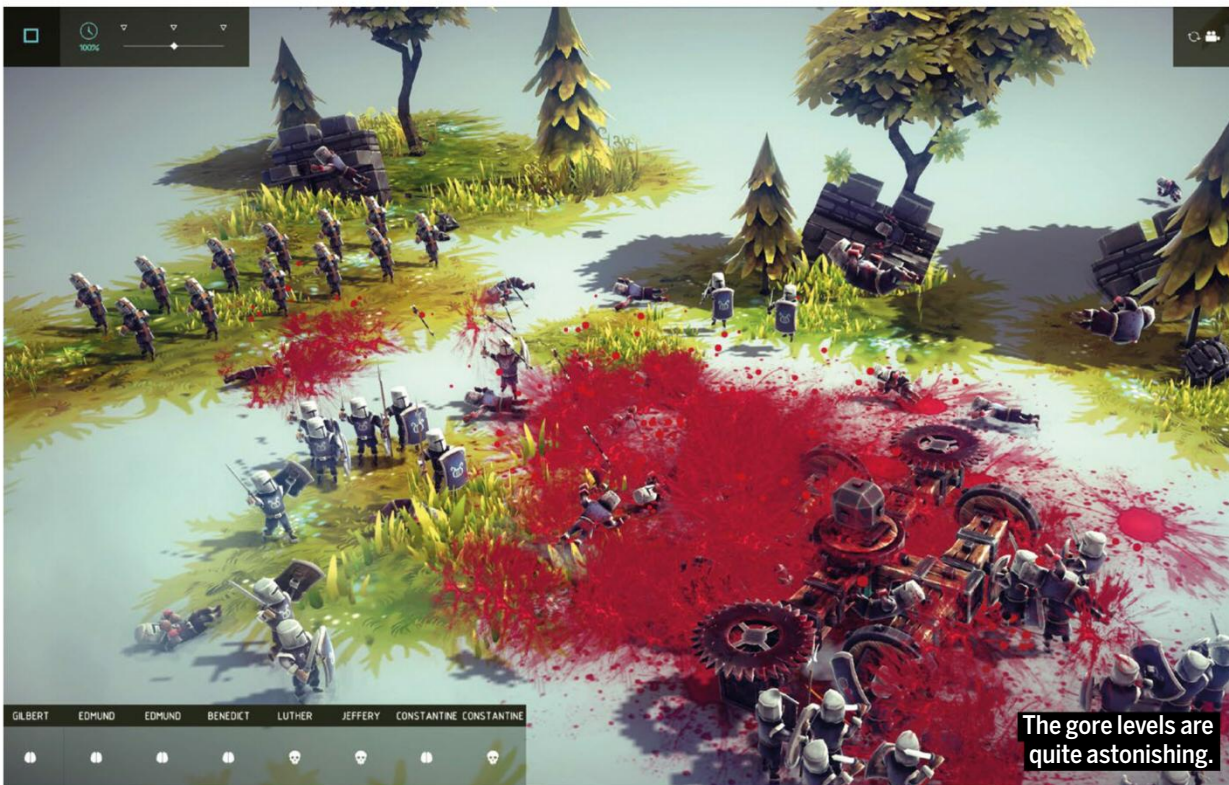
A wheel weighted by ballast sits on top of the machine, generating torque when it spins. This lets you turn and move at the same time, but it has a large turning circle.

PC GAMER

VERDICT

With a fun concept, superb creation tools, and finely crafted puzzles, *Besiege* is a game to savour.

85



INFESTED

WOLCEN: LORDS OF MAYHEM is as buggy as it is bloody. *By Fraser Brown*

An unhealthy number of hours spent carving my way through ARPGs ensured that *Wolcen: Lords of Mayhem* feels like putting on a familiar, bloodstained gauntlet. It's another misadventure set in a world full of unrelenting hordes of monsters, all seconds away from popping like balloons filled with blood and gold. Unfortunately, the bugs and balance problems are just as numerous, and they've proved to be a greater challenge to overcome.

In a genre that keeps trying to do *Diablo II* again, *Wolcen's* reliance on its predecessors isn't egregious. There are gem slots, cursed chests, an intimidating passive skill tree – some ancillary, others crucial – but rather than feeling like a hodgepodge of earlier ARPGs, it's unified by the game's true objective: building your perfect dungeon-delving hero.

Wolcen takes this fantasy and runs with it, much further than *Path of Exile* or *Diablo*. Most notably, there are no fixed classes locking you into a choice early on. You make your own out of gear and active and passive skills, drawing from lots of different archetypes to create something just for yourself, or borrowed from the theorycrafters busily crunching numbers and experimenting with builds.

HERO LAB

I've lost sleep thinking about the labyrinthine passive skill tree, the Gate of Fates. Like *Path of Exile's*, it's an elaborate network of skill nodes, some of which might give you a boost

to damage and defence, while others might be more exotic, like giving your attacks some fire damage. Within a few levels, you can fundamentally change how your character works. It's also split into three rings, each of

which can be rotated individually to open up new paths on the road to your perfect build.

You have to wait to level up before you can dabble in the Gate of Fates, but with active skills you'll be batting them away as they're flung at your head. Skills can be bought or looted, and the only prerequisite to use them is that you need an appropriate

There are no fixed classes locking you into a choice early on

NEED TO KNOW

- WHAT IS IT?**
An ARPG with more than a hint of *Diablo* and *Path of Exile*
- EXPECT TO PAY**
£31
- DEVELOPER**
Wolcen Studio
- PUBLISHER**
In-house
- REVIEWED ON**
GTX 1080Ti, Intel i7-8086K, 16GB RAM
- MULTIPLAYER**
Yes
- LINK**
wolcengame.com

weapon. Spells need a stave or a catalyst, melee skills require melee weapons, ranged skills require ranged weapons – but thanks to dual-wielding, you can double up, making a magical warrior or a swashbuckler with a pistol for backup. Skills also level up, letting you spend points on build-defining augmentations that completely change how they work.

I wouldn't get too attached to any of them, though. Despite being out of Early Access, *Wolcen* still feels very much in-development. There's a long list of skills and passives that don't work as intended, don't work at all, are ludicrously overpowered, or broken in some other way. Wolcen Studio has started fixing them, but judging by the last patch notes there's still a long way to go, and inevitably some popular builds are going to end up defanged. Of course, this is a game driven by numbers, and right now those numbers are all over the place. It's difficult to get invested in a character when they might be completely changed next week, and when so much of the game is wrapped up in experimentation and theorycrafting, it's a serious blow.

Itemisation is also the victim of some wonky numbers. *Wolcen's* gear comes with no restrictions, you can mix and match different gloves and spaulders, and you'll constantly be drowning in allegedly 'rare' weapons and armour – most of it won't be any use to you at all. Like the early days of *Diablo III*, the RNG is an utter bastard. The magical bonuses that randomly get applied to gear often don't make much sense, and *Wolcen* certainly doesn't take into account your skills or build when dumping more loot in front of you.

FIGHT FATE

Each piece of equipment you pick up unlocks that skin, letting you set a custom appearance for a small fee. If you feel like a more meaningful transformation, it's also easy to just wipe the slate clean. For another fee, you'll be able to reset your stats and



NEW GEAR, NEW YOU

You get access to four temporary forms with new abilities:



ASPECT OF DAWN
Smite enemies with a big ol' hammer and holy energy. Expect a big light show and lots of sacred damage.



ASPECT OF WAR
This guy's all about fire and frenzy. Pillars of fire, blades of fire, explosions of fire – he really sticks to his theme.



ASPECT OF INFINITY
This cosmic space angel deals a lot of aether damage and warps time and space, creating clones or ripping holes in reality.



ASPECT OF FLESH
And there's the gross one. This Aspect is covered in tendrils and makes enemies bleed with bone weapons. Lovely.

Don't forget to dodge.



Like Blizzard, *Wolcen's* dev has a thing for big shoulders.



Becoming a spinning vortex of destruction is pretty cathartic.



Wolcen loves its impractically massive hammers.

The Lords of Mayhem are living up to their name.



CUSTOMIZATION

You can play as either a scowling musclehead or a woman with a back-breaking bust.



BACK

NEXT

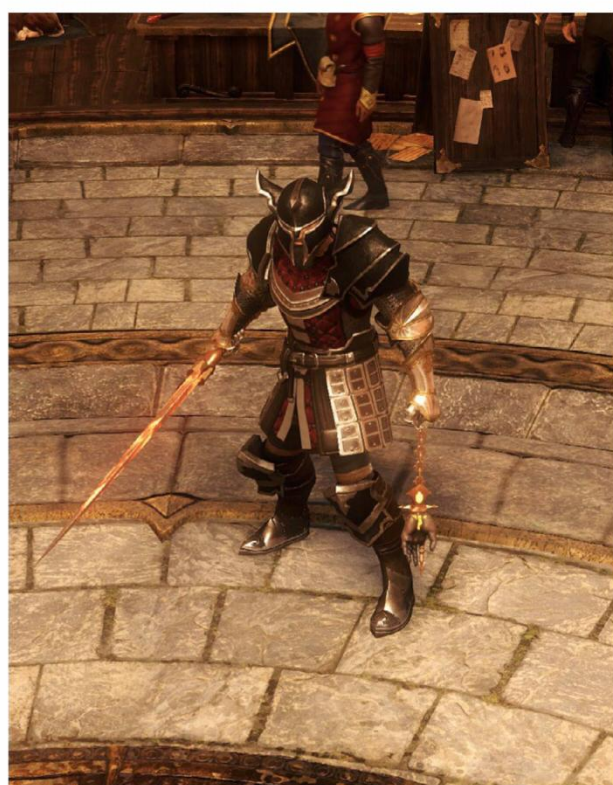
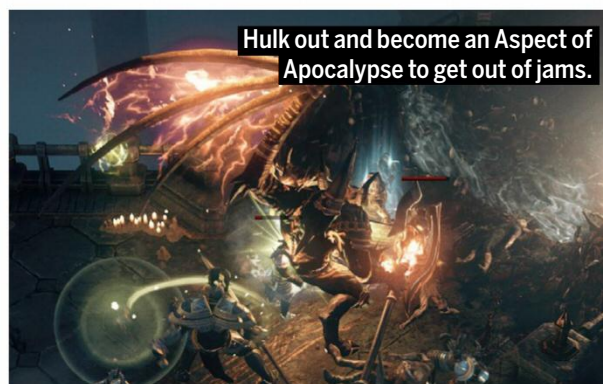
GENDER

APPEARANCE

WEAPON SELECTION

NAME

Hulk out and become an Aspect of Apocalypse to get out of jams.



Despite having a pretty conservative aesthetic, the fights get very flashy.

» passives, and you can swap out your active skills whenever you fancy. This means you can quit your job as a time mage and start sauntering around dungeons as a slick gunslinger within a scant few minutes.

While I've ended the game with a melee-focused brute, I had the most fun hopping between magic and stabbing stuff. *Wolcen* has this great tug of war going on between willpower and rage – the resources that fuel your magical and physical attacks respectively. Your willpower generates passively, while your rage builds up as you deal and receive damage; and as one goes up, the other goes down. So I'd open with a flashy magical assault, maybe taking a bit of damage in the process, then I'd wade in with my sword, all pumped up, and start popping off my melee abilities, turning myself into a whirlwind of destruction until my willpower is recharged.

There's a third resource, stamina, which allows you to use your active dodge. Hit the space bar and you'll roll out of danger, or maybe into it. Tumbling around like an acrobat to avoid yet another explosion, charge attack or frost ray does have a way of breaking up the flow of battle, unfortunately, and the boss fights in particular seem to be allergic to letting you get more than a couple of hits in before it's back to running away. Meanwhile, basic enemies are almost too squishy, dying in droves.

Throughout both the campaign and endgame, the vast majority of enemies barely take a single hit before exploding. Jumping into a pack of regular monsters guns blazing is like detonating a nuke in a petting zoo – it's carnage. It's like being the Grim Reaper, you just walk into a room and everyone dies. It could do with being a touch more challenging, especially to balance out the much, much tougher boss battles, but it's undeniably fun to wipe out an entire army in a minute.

COMBO BREAKER

The monster massacres are great, but whenever it feels like I'm getting into a rhythm exterminating *Wolcen*'s rather plain menagerie, something interrupts me – as inevitable as a chest only spitting out items I don't need. At first it was terrible input lag

BRUTAL BOSSES

Prepare for the toughest fights



1 *Wolcen*'s bosses can prove to be a big jump in difficulty after ploughing through hordes of squishy monsters, even the first one will tear you apart if you're not ready for it.

2 Big AoE and charging attacks are common, so make sure you've got stamina to roll out of danger. Managing your stamina is going to be the trickiest task in these fights.

3 Every boss has multiple phases where they get back their entire health pool and a bunch of new attacks. Try to be as frugal as possible with your potions until the second phase.

4 Make sure your Aspect of Apocalypse meter is all charged up. When you change form, you're a boss killer for a few seconds. Don't waste it on the first phase, either.

and the inconsistent frame rate, and while performance has improved with updates, the bugs have continued unabated. Sometimes they're easy to fix, like when I have to attack something to stop my character from constantly moonwalking, but other times the only solution is quitting the game and losing progress.

With more patches, *Wolcen* might

Everyone in *Wolcen* is completely bereft of charisma

be able to come back from its rough launch, but I'm not sure what can be done about its missing personality. The maps, which take you to all the old haunts, like a desert, a forest, and some ruins, are all rendered in a style that resembles *Diablo*, but in a sort of neutral, forgettable way. It's the same with the story, which is all about demons and corruption and some factions fighting each other – it's generic fantasy without a spark of its own identity. Everyone in *Wolcen* is completely bereft of charisma, and with every conversation more of the colour is drained from the world.

I perked up when I hit the endgame. The reward for finishing the campaign is a new mode where you're put in charge of a city in need of rebuilding. A management game

inside an ARPG? What pervert has been looking at my dreams? Sadly, my excitement was perhaps a little premature. The Champion of Stormfall mode is still a neat twist on *Diablo III*'s rift-focused end game, but it's more like a different take on character progression than a slice of actual city management.

CITY LIMITS

Reconstructing Stormfall confers a slew of benefits that run the gamut from an additional skill slot to new crafting features, but each building and reform takes time and resources. They all have a specific amount of production that needs to be reached before they're completed, and production is only generated when you're out slaying monsters in random maps. You can pop off on a one-map mission, or you can risk going on an expedition, taking on up to three maps for greater rewards. In both cases, death leaves you with nothing but whatever you crammed into your inventory.

It's a slow grind. You can add modifiers that make expeditions trickier, netting you even more rewards, and you can build things that raise your base production, but it's a lot of work to move an inch. Levelling up takes a lot longer, and the problem with itemisation remains, so there are fewer opportunities to grow your character. Progression is also more of a slog because you can only unlock higher level expeditions by getting to the end of the trio of maps – if you die, disconnect or get stuck, you will lose all of your progress.

Wolcen's free-form character progression and enthusiasm for experimentation could be great additions to the genre, but most of the good is undone by the sense that, as we're slicing through throngs of enemies, we're really just beta testers. And where it's not buggy and in need of rebalancing, it's incredibly beige. Also, and I really can't stress this enough, *Wolcen* is a really terrible name. There's no way to say it without it sounding like 'Wilson', which might be the worst possible name for an ARPG. ■

PC GAMER VERDICT

A mountain of issues gets in the way of the gratuitous monster murder and engaging customisation.

58

BIG BAD WOLF

BLOODROOTS' revenge is best served in small doses. *By Natalie Clayton*

Left for dead with a bullet to the head: it's hard to think of worse ways to end a Friday night. Beaten and bloodied in the snow, Mr Wolf is thirsty for blood – taking you along on his gore-soaked quest for vengeance across a stunning, painted frontier. Here's the thing about revenge though – it might be sweet, it might even be best served cold. But satisfying as it may be, it can get old fast, and it's not long before *Bloodroots'* cathartic quest wears thin.

This is some bloody gorgeous revenge, mind. Were it not for the buckets of viscera and constant cussing, you'd think *Bloodroots* was lifted straight out of a Saturday morning cartoon lineup. Kill Bill painted in the sharp, bold strokes of Cartoon Network's late-'90s heyday. Samurai Lumberjack.

Once you dive into that painted wilderness, though, all safeties are off. Each level is staggered into a series of arenas – farms, barns, townships, and compounds packed with colonial goons. Everyone, yourself included, works on the same one-hit-kill rules – it doesn't matter if you're bashing with your bare hands, a chainsaw, or a freshly picked cabbage. It's *Hotline Miami* for the Canadian frontier.

NEW TWISTS

Every other level brings a new twist to fights. Iron lads who take an extra hit to down. Cowardly snipers who'll fire highly-telegraphed rounds – bullets that don't distinguish between friend or foe and will easily splat a baddie if baited carefully.

This ain't a one-sided arms race either. As the enemies' arsenal ramps up, so does your own. New weapons start to litter the environment. Some of these – your axes and planks and such – are just more efficient at hitting things. Others are useful for keeping the nasties at bay: plungers stuck on a poor sod's head, hay bales that stagger and confuse foes when you hit them – unless, of course, you kick it through a campfire to set the poor lad ablaze.

The best tools are the ones that completely change how you traverse the frontier's deathtraps. Ladders are great for thwacking things, yeah, but leaving one propped against a wall will let you dash to new levels.

Rowing paddles make for surprisingly nifty pole vaults. Swords come with a gravity-defying dash for clearing gaps and rushing through crushing traps, and can chop down trees to open up new routes.

Swords come with a gravity-defying dash for clearing gaps

BLOOD FOR BLOOD

At their best, *Bloodroots'* arenas are brutal murder puzzles with multilayered compounds to slaughter your way through. Untangling the game's violent loops is delightful and sees you diving head-first into danger, scouting new paths, planning and re-planning until you've nailed the right route with the right tools.

NEED TO KNOW

WHAT IS IT?

A top-down, ultra-fast action game with blood and gore, and physics

EXPECT TO PAY
£14

DEVELOPER
Paper Cult

PUBLISHER
In-house

REVIEWED ON
GTX 1060 6GB, AMD FX-4130, 8GB RAM

MULTIPLAYER
No

LINK
bloodrootsgame.com

At their worst, though, it's a repetitive slog. *Bloodroots'* arenas are best when they're compact, but a little too often Paper Cult opts for a sprawling gauntlet instead. Screen after screen of traps and ambushes where one missed grunt can send you reeling back minutes. More than once I'd knock off the last geezer only to fall down a pit, sending me right back to the beginning of the encounter.

That frustration peaked at the game's first boss. A portly fellow in a boar cap and flying contraption, you chase him through a straight-shot platforming gauntlet. It's rote memorisation, with save points too few and far between. Honestly, it's naff, and I quit the game several times in exhaustion before finally burying the pig-faced git.

That's the problem, isn't it? *Bloodroots* looks phenomenal, and plays equally so in its best moments. But so much of the larger package feels careless. Some are small bugbears – irritating wee things such as a complete failure to show control prompts, or the font breaking when I tab out and back in.

But that pacing's the real killer. *Bloodroots'* levels aren't long, but they're an awful slog. Even as the novelty of finding new murderous toys to play with ramps up, my exhaustion wears thin. I can't ignore that I'm quitting the game more often than not after the eighth or ninth run through the same compound.

Maybe the fairest thing I can say about playing *Bloodroots* is that it's a bit like looking after a dog. Not a well-behaved one, mind – a right mongrel. It's daft, loud, and I know that under all that grime and matted fur is a complex beast I want to love. But damn, if it isn't an exhausting thing to keep around the house. ■

WALK ON THE WILD SIDE

Tired of howling? Try on new hats at the camp for more varied animal instincts



BEAR

Punching lads causes them to evaporate in a red burst. No fuss, all mess.



DEER

Prance about with an extra jump to get away from enemies, or hit an out-of-reach sniper.



FISH

This hat reverses your controls. You know, exactly like how fish work. Trust me.

PC GAMER VERDICT

Bloodroots is a brutally good shooter and slasher that often outstays its own welcome thanks to some bad pacing.

78

Try on hats, play old missions, or check out the view.



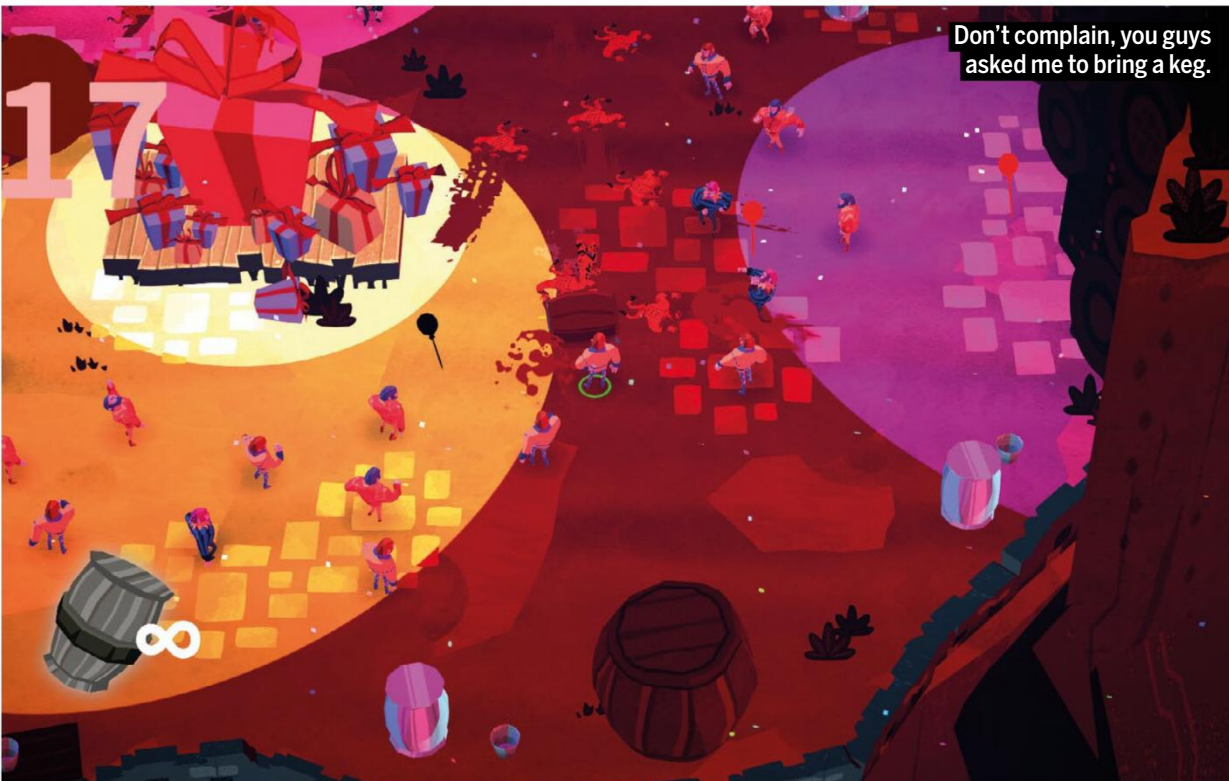
When you've gotta do a murder and visit FurCon the same day.



Fella's about to get a crash course in tree-felling.



Don't complain, you guys asked me to bring a keg.



One ladder. Three baddies. No problem.



EXTREME MECH-OVER

For all its faults, **DAEMON X MACHINA** delivers energetic, exciting mech combat. *By Chris Scullion*

When it originally launched on the Switch last year, *Daemon X Machina* was met with a muted response. By releasing an early demo seven months before release, developer Marvelous' attempt to get user feedback backfired and resulted in players being turned off by what was (at that stage) an unpolished product. But now it's got a second shot at success on PC, and it's one it absolutely deserves.

It tells the story of a world recovering from a major catastrophe. The moon has crashed into the planet, and the resulting wreck has been emitting a strange energy that's not only turning all artificial intelligence sentient, but also turning it against the human race. As luck would have it, this radiation has also heightened the abilities of a number of civilians, including your character. So you decide to offer your services to help take down the threat of AI robots via the tried-and-tested method of fighting them in big mechs.

Upon accepting a mission you'll be briefed and usually treated to a cutscene where your mute protagonist stands there while a bunch of other mercenaries who've accepted the same mission chat amongst themselves. The plot is one of the game's main issues, as practically every new mission starts with you meeting a new handful of characters. The storyline can be convoluted enough at times without

Controlling your mech takes one or two missions to get used to

you being expected to remember the unique personality traits of over 30 different mercs and recognise them when they pop up again ten missions down the line. Granted, not every merc is as important to the overall

story and the more notable ones are brought to the fore as the game progresses, but there are still a hell of a lot of names and faces to familiarise yourself with early on.

Luckily, it's in the combat where it

counts, and in that respect *Daemon X Machina* is an entertaining mech-'em-up. Its pedigree is unmistakable – it's produced by Kenichiro Tsukuda, who also produced the *Armored Core* series, and its mech designs are handled by Shoji Kawamori, who's been creating the mechs in the *Macross* series since its inception in the early '80s.

Perhaps more crucially, though, it's also approachable enough to appeal to those with no previous experience with mech games who may have been put off in the past

NEED TO KNOW

WHAT IS IT?
A Japanese third-person mech combat game

EXPECT TO PAY
£50

DEVELOPER
Marvelous Inc

PUBLISHER
XSEED Games

REVIEWED ON
Ryzen 7 3700X, RTX 2060, 16GB RAM

MULTIPLAYER
PvP and co-op

LINK
dxm.marv.jp

with worries of complexity. Controlling your mech takes one or two missions to get used to, but once it all clicks it's a breeze, especially when using a controller as it was originally designed for. Flying is toggled on and off with taps of the jump button, the triggers handle your weapons and boost function, and your weapon management is handled by the D-pad, allowing you to swap out different firearms on the fly.

ROBOT ROCK

Your mech is also armed with a relatively lenient aim assist, meaning there are times where you can pick off groups of five or six smaller enemies with ease simply by sweeping your crosshairs in their general direction. 'Hardcore' purists may balk at such support, but considering you're in a giant robot designed for combat it would probably have been odder if it didn't have the ability to unleash death on small-fry foes with ease.

The game isn't perfect. Most notably, it can start to feel a little repetitive at times. A great deal of your time will be spent accepting a mission, watching some cut-scenes, completing the mission, then choosing another. The missions aren't identical, of course – one minute you could be defending key buildings from enemy attack, the next you could be taking on one of the game's impressively long boss fights such as an early one against a massive robot spider – but the overarching routine doesn't deviate for the most part.

When it all comes together, however, it doesn't matter too much. This is a game that does its talking on the battlefield, and what it may be lacking in an engaging storyline it more than makes up for with visually striking action. ■

MECHING YOUR MIND UP *Other mech goodness available on PC*



MECHWARRIOR 5

If you prefer your mech combat slower and meatier, this first-person mechsterpiece (sorry) should be top of your wishlist.



TITANFALL 2

Combining the fluidity of parkour with the strategic nature of mech combat, Respawn's FPS gem has a great solo campaign too.



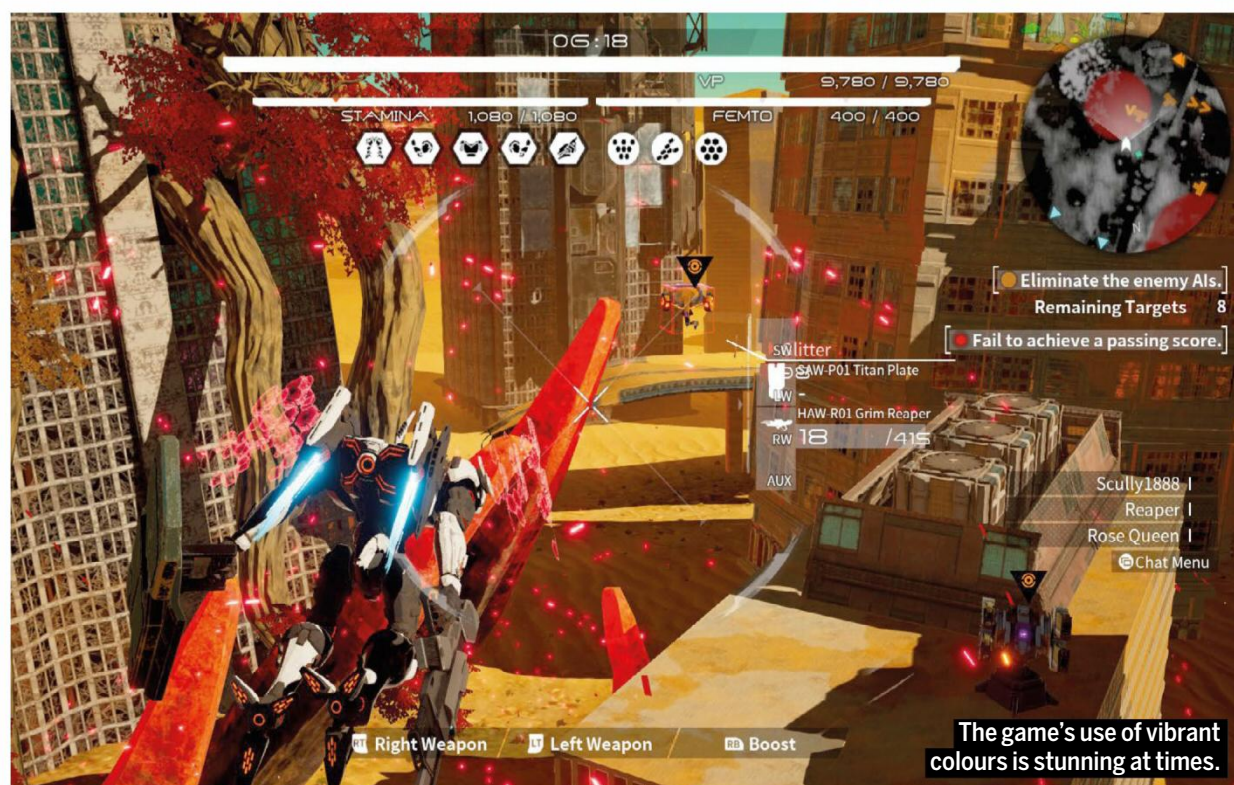
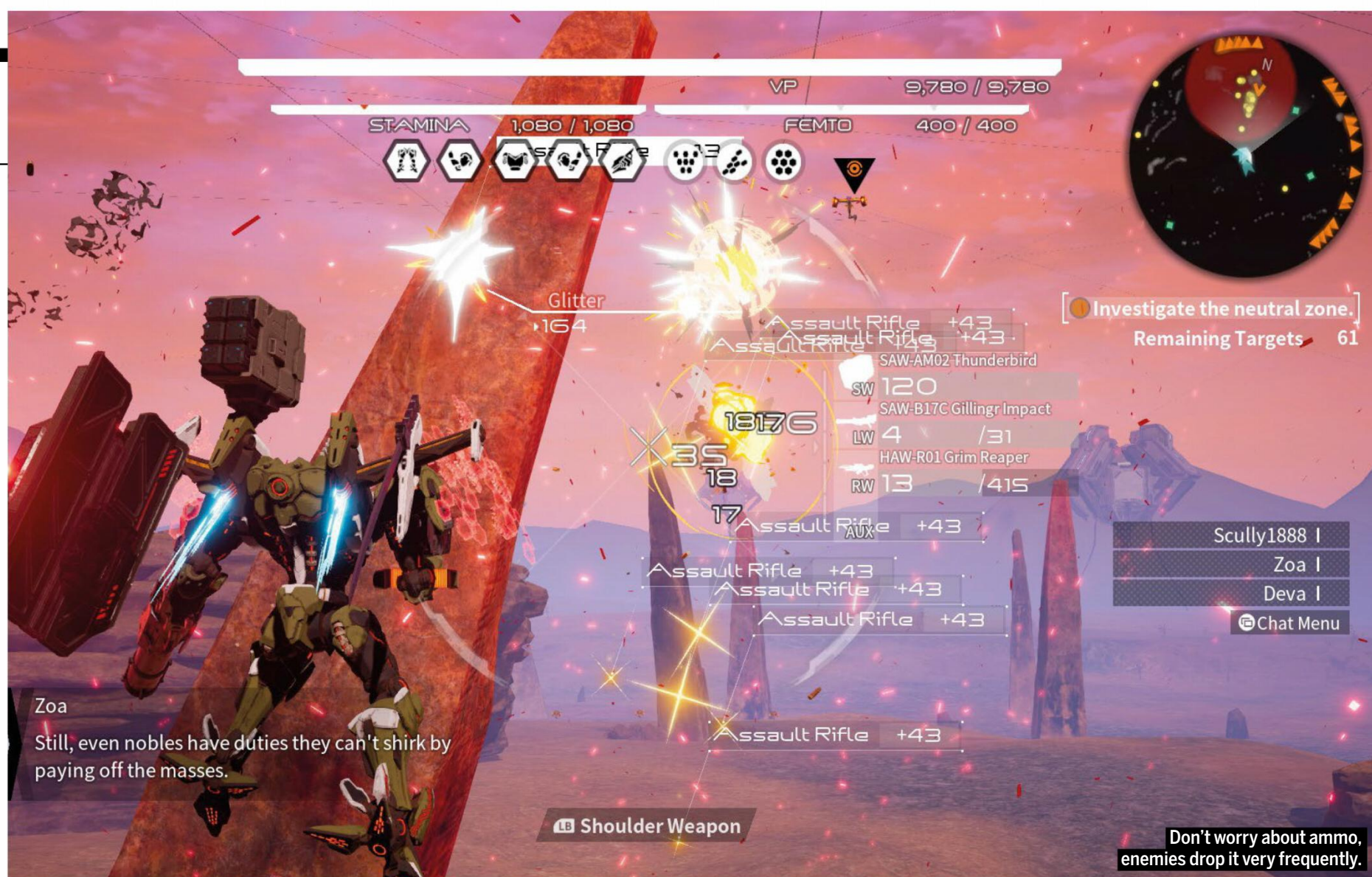
STRIKE SUIT ZERO

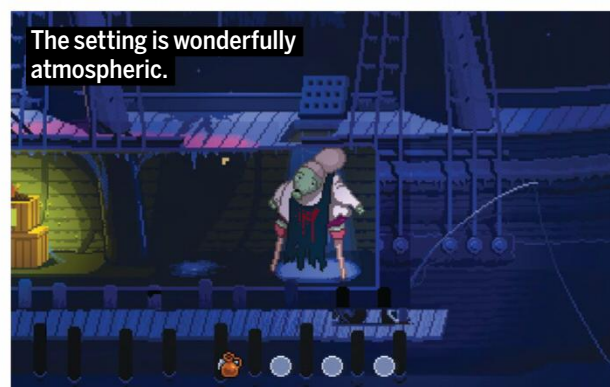
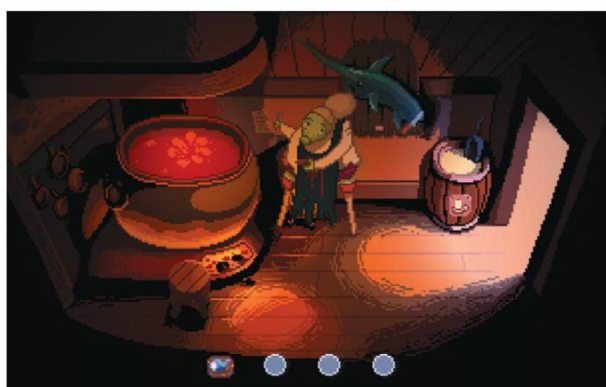
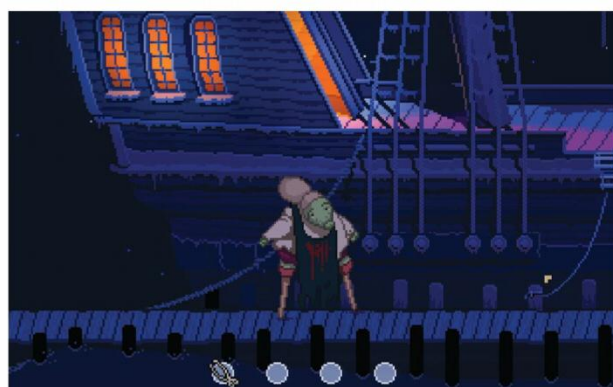
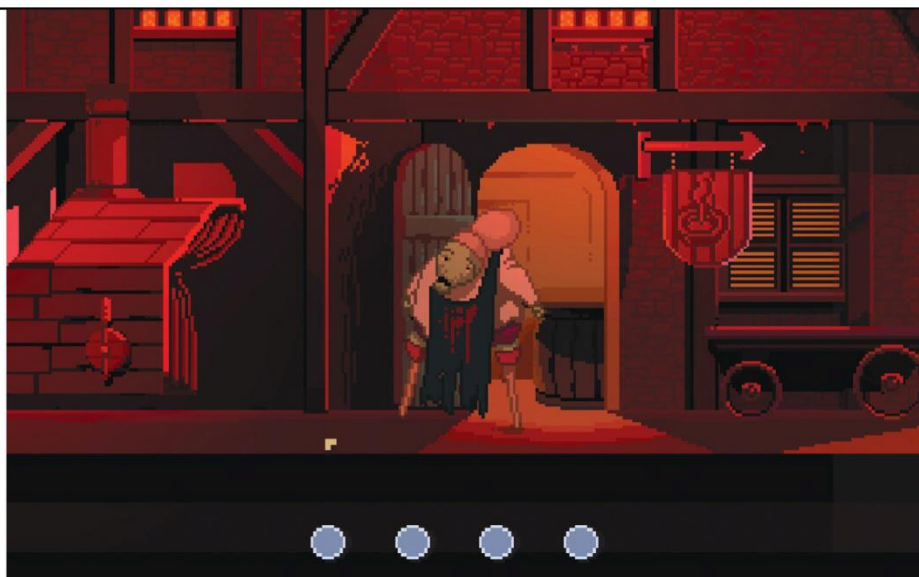
With a focus on agile Japanese-style mech combat, this is probably the closest alternative to *Daemon X Machina* you'll find on Steam.

PC GAMER VERDICT

A marvelous mechfest that plays like a dream, but it's also repetitive and lacks anything truly revolutionary.

73





HELL'S KITCHEN

Serving up just desserts in grisly adventure game **THE SUPPER**

What are you having for dinner? If it's anything more appetising than a human hand slathered in 'special sauce', then you'll have a better night than the wretched customers in this horror adventure game. In *The Supper*, you play as the peg-legged owner of a tavern famous for its special sauce. And, like all dishes preceded by the word, 'special' of course means 'you don't wanna know'.

This is a game about rooting out ingredients, and binging them in a big, bubbling cooking pot, before serving them up to your guests and... seeing what happens. It's a twisty interactive fantasy story, made by an emerging master of the form, Octavi Navarro. You might know the developer for the *Midnight Scenes* anthology series. Well, this is darker, more confidently written and drawn than those sci-fi point-and-clicks.

The dockside fantasy setting reminds me a little of *Monkey Island* series, but the comedy here is far more grotesque in nature, as you make three dishes for your three important guests. With little dialogue, *The Supper* tells a violent story, in the vein of *Sweeney Todd*, but it confidently becomes its own thing by the end of the game.

You can see the arduous history on Ms Appleton's pixel face

The art helps, of course. You'll have noticed this is gorgeous, the characterful environments, ghoulish cast and expressive animation doing a great job of shouldering the story. You can see the arduous history on Ms Appleton's pixel face, just by looking at her exhausted eyes and sagging jaw. You can feel her pain as she struggles from one screen to the next.

It's refreshing to play an adventure game where the protagonist has a (mysterious) drive all of their own, rather than running errands for a bunch of NPCs. As this is a small game, comprising only a few screens, you might expect the puzzles to be limited in scope, and that bears out. You'll hunt down items, and once or twice you'll jam them together or use them in the world. As you're only ever carrying one or two things at a

NEED TO KNOW

WHAT IS IT?
A gory point-and-click adventure game set in a ghoulish tavern

EXPECT TO PAY
Free

DEVELOPER
Octavi Navarro

PUBLISHER
In-house

REVIEWED ON
AMD A4-6300@3.7GHz,
6GB RAM,
GeForce GT 610

MULTIPLAYER
No

LINK
bit.ly/TheSupper

time, it's pretty easy working out just what goes where. *The Supper* isn't overly interested in the puzzle aspect of the adventure genre, which, of course, is perfectly fine.

IDIOT SANDWICH

It's just a little bit unsatisfying, engineering these exquisite (ly horrible) dishes, as the act of doing so is so strictly linear. You'll cook these dishes in a specific order, interacting with only parts of the game world at a time. Why can't I see to this customer first? Or deal with this chap second? Narratively, nothing appears to hinge on this rigid ordering.

It's the narrative that comes first, and it's hard to argue with that when you've seen the story through to its conclusion. You've probably played better big adventure games, but there's an art to making the small ones. You must only dish out so much, leaving fluff like side dishes back in the kitchen. *The Supper* is all protein, dripping in special sauce. ■

PC GAMER VERDICT

A dark, original and satisfying short story that crams a lot of game into one single mouthful.

83

SCHWERK IT

Four-play in **SCHWERKRAFTPROJEKTIONSGERAET**

Of course, the problem with *Tetris* is that it's too easy. One falling block at a time, and a single pile to take care of? Why, that's child's play, like a Rubik's cube, or calculating Pi. (Not pies though, there's no point calculating them.)

No, what the game needs is three piles of *Tetris* blocks. Wait, make that four. And four simultaneously falling tetrominos too. Basically, what *Tetris* needs is to be four games at once. Somehow – god help us – developer Stephen Lavelle has achieved this.

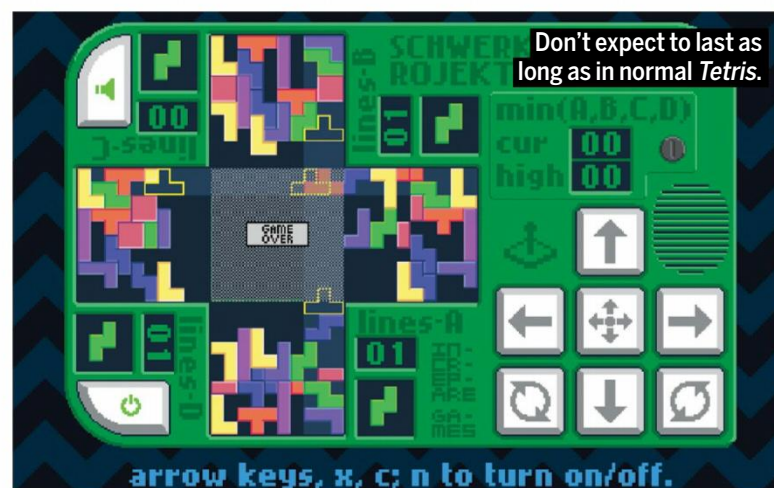
How does (Ctrl+V) *Schwerkraftprojektionsgeraet* accomplish this? Mainly by taking away the time pressure: you're given all the time in the world to align each tetromino. The rub is that, as it falls automatically to the bottom of the screen, it will also fall to the left, to the right, and to the top of three

other playing fields, with the block splitting into four right after you select its trajectory.

Christ. Basically, it's a lot to think about it. Particularly when you consider that, while you can position and rotate the block before it falls, it will fall in the same way to each of the four playing fields. That configuration of the L-piece might tidy up a line on one game board, but it may bring another closer to devastation. If any board piles too high it will, of course, be game over – so there are four outcomes to consider, every single turn.

There's a certain, ideal player who will be utterly captivated by *Schwerk...* this game. That's not me, unfortunately, but I can appreciate the cleverness and sheer invention of the game, on the same level that a woodlouse might appreciate the Sistine Chapel. ■

79



NEED TO KNOW

EXPECT TO PAY
Free

DEVELOPER
Increpare

LINK
bit.ly/2ITWkfW

CHILL, BILL

Take a load off with the mellow **RESPITE**

You, I'm sorry to say, have made an ass of yourself. You've worked far too hard, and the stress of the job has just piled up. *Respite* – surely the world's most chilled out adventure game – explores the hazy morning after the stressed-out night before.

After (eventually) getting up, here you'll explore your swish shared apartment, traipsing to the living room, the kitchen, even into your flatmates' rooms while they're away. Not that the game sees this as a violation of personal space, as you've volunteered yourself to water the plants in their absence. Really, you're there to find little notes from a well-meaning flatmate, who gently insists that you've been working too hard, and should probably take a rare day off today.

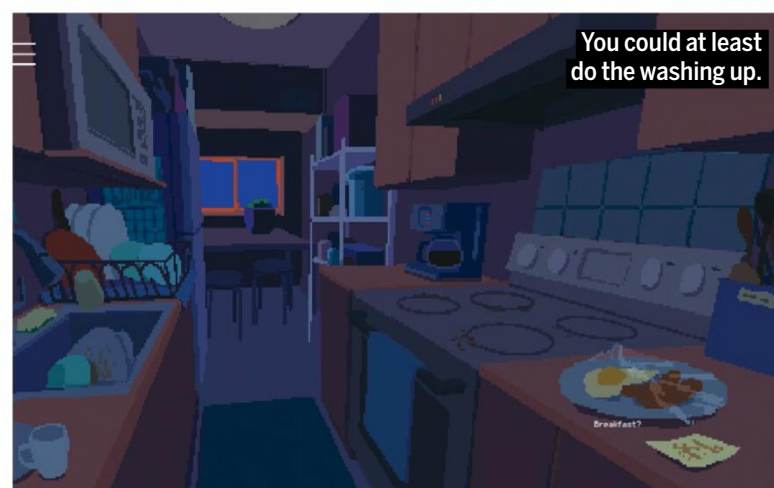
The backstory unfolds as you read these cute little missives, and as you

examine fixtures inside your cluttered home. Work isn't everything, the game suggests. Maybe have a lie-in once in a while. At the end of the game, you decide for the protagonist: does he stay at home, or head back to his office job?

This is a sweet, refreshingly mellow and well-meaning game. But it does feel slightly limited, as it probably won't speak to the people who have to work – who can't afford to take a day off, even for their health.

That aside, there's some good snooping on offer here – and what are adventure games but excuses to snoop around other people's homes? This is less *Gone Home*, and more *Stayed Home*, rewarding your curiosity with a messy apartment full of objects to examine, and snippets of backstory to glean. If nothing else, it was worth staying at home just for that. ■

71



NEED TO KNOW

EXPECT TO PAY
Free

DEVELOPER
Klairs

LINK
klairs.itch.io/respite

THEY'RE BACK

OLD GAMES REVISITED by Matthew Elliott



The place where thatched barns and bug buses collide.



KWAMA CHAMELEON

MORROWIND offers unparalleled Blight entertainment despite its age

Some games you finish, some you stop playing and intend to return to. For me, *Morrowind* falls into the latter category. I've been the Neverine, finished the Morag Tong and Fighter's Guild questlines, topped house Redoran, and more. But I know there's room to go back and find something new; to roll a new character that isn't just another noble orc and see a different side of Vvardenfell.

I get as far as Socucius Ergalla, the *Morrowind* census taker, before I falter. I call my new orc Grogwell. Generally, I'm not one for stupid names in RPGs, but Grogwell is the title an orc would choose if he was trying to sound fancy. In keeping with that, I make a custom class called 'privateer' – a swashbuckling Orsimer, sadly bereft of a ship, who gets by selling goods and swinging sabres. It's a reminder of how malleable and deep *Morrowind*'s character system seems even now. I feel like I know who Grogwell is before I even set off.

I do all the standard *Morrowind* startup stuff: steal everything I can see, return Fargo's ring, sell enough stolen junk to buy armour and that aforementioned sabre. That done, I take a stroll around the surrounding area and immerse myself in those

thrilling, aimless moments at the start of every *Elder Scrolls* game. I'm reminded of how much cool stuff there is to find around Seyda Neen. I discover sunken grottos, a murdered tax collector and, my personal favourite, a mage called Tarhiel falling to his death after miscalculating how his Scrolls of Icarian Flight would work.

A testing, exploratory experience, with a spirit of adventure

The combat should be frustrating by today's standards. All attacks have a to hit roll, so early fights are comically inept: a

gormless dance of swinging, missing and praying for the *whack* of a strike that connects. But it's still oddly enjoyable. I'm only butchering insects and crabs to begin with, so Grogwell's lacking skills are but a small hindrance, and I daren't risk an actual fight. I get into a tangle with three small slaughterfish – *Morrowind*'s second most annoying

NEED TO KNOW

WHAT IS IT?
The mushroom enthusiast's favourite *Elder Scrolls* game

EXPECT TO PAY
£13

DEVELOPER
Bethesda

PUBLISHER
In-house

REVIEWED ON
Intel Core i7-7700 CUP
@ 3.60GHz, 16 GB RAM,
NVIDIA GeForce GTX
1070, Windows 10

MULTIPLAYER
Not a chance

LINK
beth.games/2WjJSy6

enemy after cliff racers – and even this early on, there's a moment where I have to splash back to the safety of the shore before three discount piranhas cut short my adventure.

A PIRATE'S LIFE FOR ME

I'm still struck by the density and freedom of it all. I deduce who murdered the tax collector by looking for the person who owed the most money. In the end I let him go because Grogwell is a pirate, and has no respect for The Man. It feels like later *Elder Scrolls* games wouldn't be so confident in players to find their own path (understandably so, in some cases, since *Morrowind*'s map is terrible and there are no waypoints). But because of this, *Morrowind* is a different game – a testing, exploratory experience, with a spirit of adventure often lacking in the sequels. I feel more heroic killing a big fish ten minutes after landing in Vvardenfell than I do killing a dragon an hour into *Skyrim*. ■

PC GAMER VERDICT

It can be stilted and frustrating at times, but *Morrowind* is still Bethesda's freest, most evocative world.

85

ANTI HIRO

DAIKATANA and misplaced self confidence

Adding *Daikatana* to your library is like owning a piece of history, in much the same way as keeping your life-threatening gallstone on your mantelpiece. I was prepared for it to be gently disappointing, but *Daikatana* is bad in so many interesting, specific ways that its terribleness is almost compelling.

Let's do pleasant surprises first. The voice acting isn't wholly awful. It opens like a neo-noir *Shenmue* starring melted wedding cake decorations, but the setting is at least different. It's stupid, but I like how committed everyone is – there's a high school drama earnestness that's rather endearing. The controls are smooth, it's relatively well optimised and punching signs is fun. There are undoubtedly worse games.

But then the fighting starts. The enemies in the early parts of

Daikatana aren't just bad. It's as if the Axis of Evil sat around an orangutan-upholstered table and designed the most objectionable mobs imaginable. "Poison frogs! Or maybe hidden turrets. Wait, no: electric wasps! Everyone hates electric wasps."

Yet despite this – and perhaps most enjoyably of all – *Daikatana* displays an admirable degree of audacity. When you try to turn it off, it displays a pithy, finger-guns quip about why you should keep playing. On-screen prompts are delivered with the braggadocio of an investment banker beating his son at Monopoly. If *Daikatana* was a person, it'd be an MLM entrepreneur and after dinner speaker who earned a six figures telling chronically depressed people to believe in the beauty of their dreams. In that respect, and in that respect alone, we can all learn from *Daikatana*.

38



NEED TO KNOW

EXPECT TO PAY
\$5

DEVELOPER
Ion Storm

PUBLISHER
Square Enix



COMMANDER KEEN

With the original *Doom* gracing the cover this month, I thought I'd go back to one of Romero and Carmack's first ever project: the quietly revolutionary *Commander Keen*. The inaccurately-named *Complete Pack*, missing *Aliens Ate my Baby Sitter* and *Keen Dreams*, proves that sometimes you have to skip the burgeoning 3D phase and go back further to truly enjoy old games. Once you figure out the deranged controls (you have to press two keys to fire your laser!) it's surprisingly fun. The low-key metroidvania vibes feel modern, and there's a joyfulness that's hard not to like, especially in light of everything the dev team did next. Enjoy it untainted before the gritty reboot.

75



TOTAL WAR: MEDIEVAL 2

One surprising thing about going back to old games is how little they initially give you to work with. *Medieval 2*, for example, starts with only five playable factions, locking the rest till you win a campaign (or manually unlocked them by altering the Descr_strat file, which I still remember after 12 years). The simplicity is surprisingly welcome elsewhere. It might be because *Medieval 2* is the *Total War* I've played most, but everything is still so immediate and intuitive. It's a flimsy challenge compared to the more aggressive AI in recent iterations, but that's maybe why I like it so much: stacks of orcs never get in the way of my plans for world (or at least EU) domination.

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THE LAST EXPRESS

The *Last Express* is the adventure game equivalent of a Saturday morning spent binging Poirot while eating toast. There are dining carts, alluring strangers and more dramatic facial hair than a cereal bar during Movember. The rotoscoped art style and branching stories mark *The Last Express* out as a unique experience, but it can also be a stressful one: you can fall behind schedule and miss opportunities, giving everything the anxious sizzle of real-life travel with tight connections. But with more moustaches.

72



THE GAME JUST
GOT REAL



GE65 Raider

BOUNDLESS VISION, FEARLESS POWER



Cooler Boost 5

240Hz

Up to Intel® Core™ i9 processor | Windows 10 Home / Windows 10 Pro | Up to NVIDIA® GeForce RTX™ 2080

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OVERCLOCKERS UK

SCAN S

uk.msi.com

HARDWARE

GET THE **PERFORMANCE** YOU DESERVE



96

GROUP TEST

Find your perfect mic for streaming, podcasting and more.



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TECH REPORT

Investigating what could be a huge breakthrough in computer memory.



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BUYER'S GUIDE

Our expert advice for building your next PC.

GROUP TEST

MICROPHONES

Sound your best with the finest microphones for streaming, podcasting, and gaming.

By Jorge Jiménez

For serious streamers, there's nothing worse than not being heard during your broadcast. Your microphone tends to be the unsung hero of your entire streaming arsenal.

When choosing the best microphone, there's one thing we look for above all else: can you be heard loudly and clearly?

Whether you're looking to start a podcast with your buddy where you rank MCU movies, or doing a retro games stream, USB microphones are becoming more and more popular.

Figuring out which mic is best for you comes down to how you're planning on using it. XLR mics offer the best studio-quality sound, but are very pricey. USB mics, on the other hand, are easier to set-up, a lot cheaper, and play well with most audio software. Also, note the microphone's polar patterns, as this is the easiest way to figure out what the best use is. Common polar patterns include:

Cardioid: The most important. Records in front of the microphone. Perfect for vocals and streaming.

Bidirectional: Captures audio in front of and behind the mic. Ideal for one-on-one interviews.

Omnidirectional: Picks up sound from every direction, for those round-table discussion programmes.

Stereo: Perfect for ASMR recordings. Search YouTube for 'ASMR' if you want an example, as it doesn't come off well in print...

Now you know all that, you're almost ready to get started.



HOW WE TEST

Audio quality isn't everything, but it's still the most important factor when testing a microphone. The point is, after all, to find a mic that makes you sound good.

We test the microphones in multiple setups and with different settings, though primarily with the 'cardioid' recording pattern when available.

Everyone's setup requirements are different, so a mic must perform well under a handful of different scenarios.

You need a mic that sounds great under any circumstance and can adapt to them, however, you need to use it so you can play your games comfortably and still sound great on your stream.

The form factor is also something that matters. In the case of a standing mic, you'll be staring at it every time you are sitting at your desk – and attachable mics need to make sure they aren't too distracting.

A mic's form factor can also play a role in how adaptable it is, as you'll need to make space for it. We used every mic in multiple settings with different PCs, keyboards and monitors, getting a feel for how they looked and performed in each environment.

As a streamer, your mic will also be in view for your audience, so its appearance will be relevant.

Finally, the price is an essential factor when looking at how good a particular mic is. Price is vital in comparing what one option can offer over another.

Yeti X

BLUE £150

The best USB microphone for streaming

1 The Blue Yeti X is a hybrid model of the Nano and the original Yeti (see over page). This sturdy microphone has an LED-lit front panel that monitors your volume levels at a glance and the sound quality remains top-notch. If you're choosing between this and the original Yeti, the Yeti X has four condenser mic capsules as opposed to the original's three. The Yeti X also offers a wider array of customisation options and adjustments you can make with the new smart knob.

The biggest and perhaps most useful change comes in the form of Yeti X's Blue Voice software via

G Hub. Here you can add preset (or customise your own) filters to your voice to make yourself sound like a chatty AM host or something crisper and more modern. It's even got a toggle for noise reduction in case your recordings are plagued with the sound of a fan, useful as the Yeti X picks up every nearby click and distant radiator sound. The Yeti X is the best non-XLR microphone you can pick up for under £200.

PC GAMER VERDICT

- ⊕ Best sounding Blue microphone
- ⊕ LED front panel
- ⊖ MicroUSB
- ⊖ Buttons too noisy

SPECS POWER: 5V / **POLAR PATTERNS:** CARDIOID, BIDIRECTIONAL, OMNIDIRECTIONAL, STEREO / **CONNECTIVITY:** USB / **FREQUENCY RESPONSE:** 20HZ-20,000HZ / **FEATURES:** BLUE VOICE, ZERO-LATENCY MONITORING, SMART KNOB

Quadcast

HYPERX £120

Excellent sound quality for the money

2 HyperX's gamer-centric Quadcast is excellent value for the streamer looking for an easy-to-use clear sounding microphone.

Its cardioid pattern works well to bring out the subtle details of your voice without drawing in background noise. There's a clarity to the high end that we found really commendable at this price point. A note for mechanical keyboard users though: the Quadcast will pick up the clicks, so it's worth running your signal through a noise suppressor.

The built-in shock mount is reason enough to pick up this mic. Decent shock mounts

usually go for around £50, and help prevent the microphone from picking up any accidental bumps and thuds during streaming. Another addition is the touch-sensitive mute button. Often, buttons and switches make a loud click when trying to record, and this is a thoughtful solution for that common issue. The Quadcast hits the sweet spot of price, sound and features, and the mount seals the deal.

PC GAMER VERDICT

- ⊕ Easy to set up and use
- ⊕ Touch-sensitive mute button
- ⊕ Built-in Shockmount
- ⊖ Best sound requires adjustments

SPECS POWER: 5V / **POLAR PATTERNS:** CARDIOID, BIDIRECTIONAL, OMNIDIRECTIONAL, STEREO / **CONNECTIVITY:** USB / **FREQUENCY RESPONSE:** 20HZ-20,000HZ / **FEATURES:** BUILT-IN SHOCKMOUNT

GROUP TEST

“IF YOU’RE ON THE TALLER SIDE, YOU MAY END UP HUNCHING OVER YOUR DESK TO SPEAK INTO THE MICROPHONE”



3

Yeti Nano

BLUE **£100**

A good choice for beginners

3 This miniature version of the classic Blue Yeti is perfect for those just starting out with streaming; it has great sound-quality, while its diminutive size and lightweight metal build make it easy to transport (this is at least 40 per cent smaller than its cousin).

The difference its 24bit / 48kHz recording sample rates make is noticeable, too; putting audio from the Nano and original Yeti side by side reveals that the former is superior by quite a margin. It's only got two polar patterns, sure (cardioid and omnidirectional), but the Yeti Nano more than makes up for it.

As you've probably guessed already, the Blue Yeti Nano is small – that means if you're on the taller side, you may end up hunching over your desk to speak into the microphone, which we can't imagine will be comfortable for long periods of time.

You also might want to invest in a pop shield – a small mesh screen you place between your mouth and the microphone – as it is quite sensitive to pops.

PC GAMER VERDICT

- ⊕ Very small and light
- ⊕ Easy to use
- ⊕ Great sound-quality
- ⊖ Not as many polar patterns as others

SPECS POWER: 5V / **POLAR PATTERNS:** CARDIOID, OMNIDIRECTIONAL / **CONNECTIVITY:** USB / **FREQUENCY RESPONSE:** 20HZ-20,000HZ / **FEATURES:** 48KHZ SAMPLE RATE, ZERO-LATENCY MONITORING, MUTE & HEADPHONE VOLUME CONTROL

NT USB

RODE **£170**

A fine, professional-looking mic

4 Rode's NT USB screams 'professional'. Mimicking the look of studio microphones at a reasonable cost, this is a good choice for users who want to take their hobby further. Its sound quality goes above and beyond the competition, and the inclusion of a free pop shield is appreciated.

It may only have one polar pattern – cardioid – and some odd design choices such as the smooth knobs, but this remains a top option for voiceover and streaming specialists.

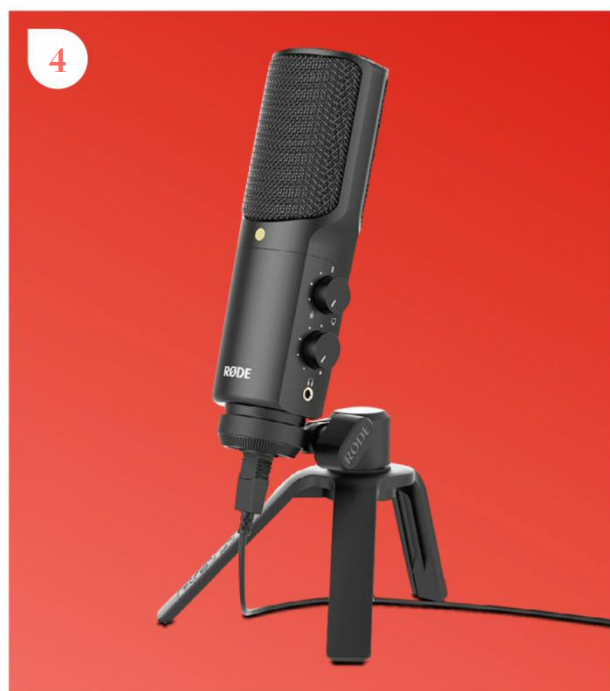
The NT USB delivers fantastic audio. It's perhaps the best standard of sound we've heard

from a USB microphone. It's got a talent for filtering out background noise as well; when using it in our busy office, chatter was reduced to a murmur that never distracted from the recording. Even with the subject a short distance away, or behind a computer, the NT-USB performs admirably. This brilliant audio quality trumps the competition in almost every regard, and the inclusion of a pop filter definitely helps.

PC GAMER VERDICT

- ⊕ Fantastic audio
- ⊕ Free pop filter
- ⊖ Only one polar pattern
- ⊖ Unsteady tripod

SPECS POWER: 5V / **POLAR PATTERNS:** CARDIOID / **CONNECTIVITY:** USB / **FREQUENCY RESPONSE:** 20HZ-20,000HZ / **FEATURES:** SIDE-ADDRESS, ON-MIC MIX CONTROL, POP SHIELD, TRIPOD, ZERO-LATENCY STEREO HEADPHONE MONITORING



Yeti USB

BLUE **£120**

An oldie but a goodie, with plenty of options

5 The quintessential microphone for streaming and amateur recording, the Yeti more than earns its success. Affordable, versatile, and easy to set up, this has become something of a gold standard by which every other mic is judged. That's because the Yeti excels in almost every way. It has clear, high-quality audio. Straightforward controls that ensure that it's easy to adjust. A streamlined, sturdy design that makes it likely to survive a fall. And the four polar patterns mean that it's adaptable.

The Yeti's quality was clear and full in every test we gave its

multiple patterns, though you may want to invest in a pop shield for the best possible results. Its omnidirectional mode captured a room full of chatting people clearly and loudly, the cardioid and bidirectional patterns were pleasingly precise (although you'll need to lean close to the mic to get the best from them), and its stereo pattern is perfect for podcasting, neatly separating multiple voices.

PC GAMER VERDICT

- ⊕ Very adaptable
- ⊕ Multiple polar patterns
- ⊖ Foam base padding ineffective
- ⊖ Will pick up keyboard clicks

SPECS POWER: 5V / **POLAR PATTERNS:** CARDIOID, BIDIRECTIONAL, OMNIDIRECTIONAL, STEREO / **CONNECTIVITY:** USB / **FREQUENCY RESPONSE:** 20HZ-20,000HZ / **FEATURES:** ZERO-LATENCY MONITORING, GAIN, MUTE & HEADPHONE VOLUME

Seiren X

RAZER **£100**

The best compact and portable microphone

6 Half the size of the original Seiren, and just as good, the Seiren X is designed with portability in mind – it stands on your desk like a can of Red Bull. The built-in shock mount works well to absorb unwanted spikes from desk kicks and the like, while a volume control and mute button are the only controls.

There are a couple of minor downsides, inevitably. Like the Blue Yeti we found that this mic picks up a noticeable amount of ambient noise like the dreaded mechanical keyboard clatter. It's not enough to prevent it from being a feasible streaming mic,

but we'd hoped for better noise-cancelling from Razer given its super-cardioid polar pattern. This is a tighter pickup area than the traditional cardioid, the idea being that the Seiren X picks up what you want it to – your voice – while falling deaf to background noises. Recording quality is high, as is the quality of finish, and it offers a sensible and very usable compromise between full-size gaming mics and headsets.

PC GAMER VERDICT

- ⊕ Portable
- ⊕ Great clarity
- ⊖ Just one polar pattern
- ⊖ Picks up some background noise

SPECS POWER: 5V / **POLAR PATTERNS:** SUPER-CARDIOID / **CONNECTIVITY:** USB / **FREQUENCY RESPONSE:** 20HZ-20,000HZ / **FEATURES:** BUILT-IN SHOCK MOUNT, MUTE BUTTON, ZERO-LATENCY 3.5 MM HEADPHONE MONITORING



Stibnite is a mineral containing Antimony, a group V metalloid that can be alloyed with group III post-transition metals to create III-V materials.

Image credit: iobart, Creative Commons Attribution-Share Alike 3.0 Unported

MAKING MEMORY

A product from a UK university could merge RAM and SSDs forever

The church (or pipe) organ is one of the oldest instruments still used in European music, and has a fascinating history stretching back to Ancient Greece and a chap called Ctesibius of Alexandria in 3rd century BCE. It then took until the 19th century for it to be displaced as the most complex man-made device by the telephone exchange. It's also a metaphor we weren't expecting to hear from a professor of physics talking about his new invention.

But this isn't a story about church organs. It's about quantum resonant tunnelling, III-V materials, and how they enable a new form of data storage device that could take the place of both RAM and flash storage inside future PCs.

Companies such as Intel, with Optane phase-change memory, and Samsung with its Z-NAND technology have been threatening to shake up the world of memory and storage for a while, but an English physics professor has secured a US patent for what he and his team call ULTRARAM. That's storage that's as fast as SDRAM, but it's non-volatile like an SSD, so it keeps its data stored when you turn off the power, all while using one per cent of the energy consumed by the DDR4 in your rig.

"The way our memory works is the same way as flash, essentially, but in the first instance we're trying to replace

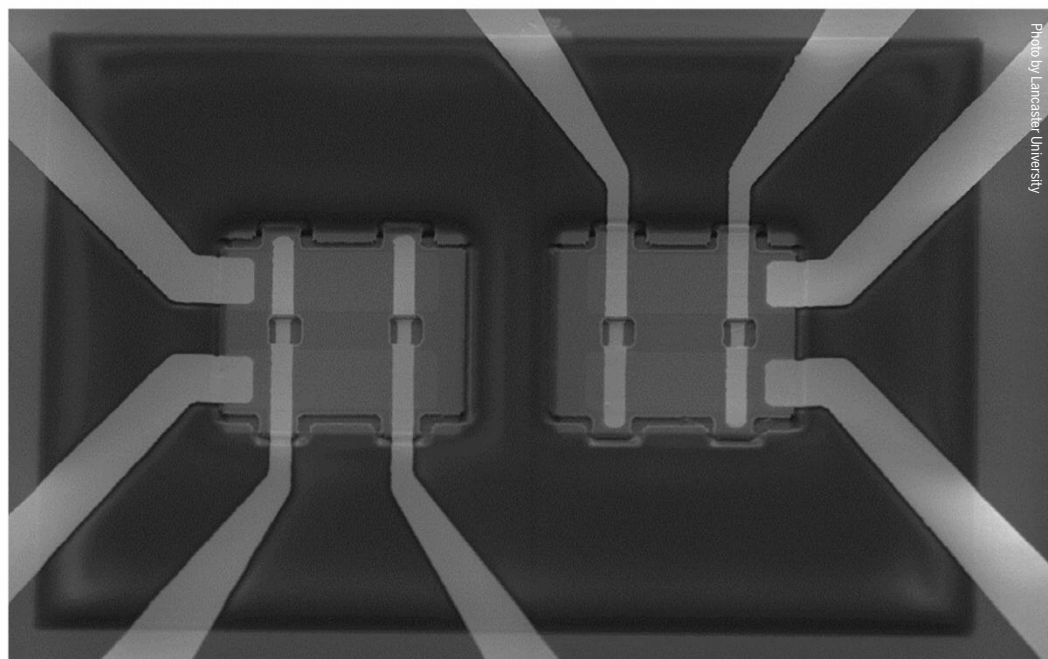
DRAM," says that professor, Manus Hayne of Lancaster University. "We think we can match every single specification of DRAM then in addition have a memory that's non-volatile, plus it has a lower switching energy. It should have the same speed, the same endurance, but be more compact and cheaper than DRAM. But if the working memory in your computer is non-volatile, then that would actually change how the computer works. We're not saying we're going to replace NAND flash straight away, because it's just extremely cheap, getting cheaper and the density is going up all the time. At the moment we don't see that we can compete with that. But if you have a working memory that's non-volatile, then it may be that you don't actually need the storage locally. Things are increasingly going on the cloud, so you might wonder how much local storage you actually need."

This vision of PCs (or more likely handheld devices in the short term) as dumb terminals whose processing and storage is outsourced to the cloud may horrify some, while giving a case of the warm fuzzies to those who like their devices sleek, cool and with enormous battery life. Advances in 5G connectivity suggest the bandwidth is almost there to make such a device a reality, while gaming would take the Stadia approach. Meanwhile, in the data centres that currently use about two per cent of total worldwide energy, a figure that is growing inexorably, the savings could be enormous as less power is used both for running and for cooling.

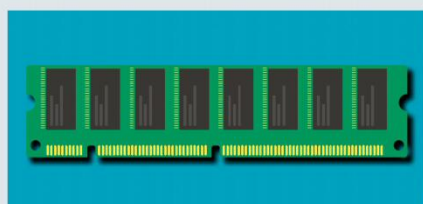


Old names linger on

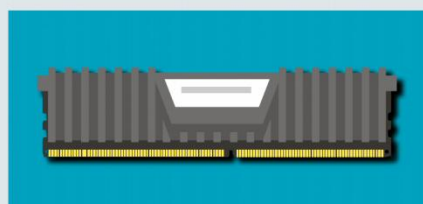
A III-V compound semiconductor is an alloy, containing elements from groups III and V in the periodic table. Metals such as indium, gallium, boron and arsenic can be alloyed together to provide different semiconducting properties. Look at a modern periodic table, though, and you'll be confused – these groups have been renamed 13 and 15, with silicon to be found in-between, in group 14.



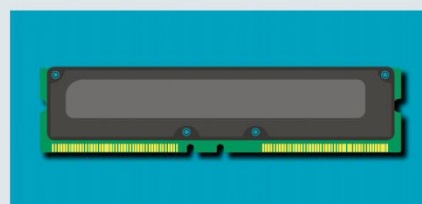
DAMN RAM *What's under the hood of your PCs*



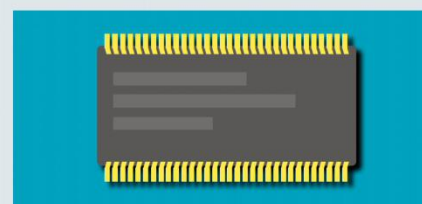
1 SDRAM The original synchronous dynamic RAM ran at 100 or 133MHz. You will have used these in builds containing Pentium II chips.



2 DDR SDRAM These DIMMs transfer data on the rising and falling edge of the clock cycle, for the Double Data Rate of their name. It's still in use today as DDR4.



3 RDRAM Rambus DRAM was used in early Pentium 4 builds. It was slower, hotter and larger than DDR SDRAM, but a deal with Intel saw it supported anyway.



4 GDDR SDRAM One feature that sets GDDR SDRAM apart from other RAM is the wider prefetch bus, giving fast access to data stored on the same row.

Extraordinary claims, of course, require extraordinary explanations. How come, in 52 years of silicon RAM chips, we've not done this before? The answer, of course, is that ULTRARAM doesn't use silicon, preferring a compound III-V semiconductor that... we'll let Hayne explain, "III-V semiconductors are the basis for opto-electronics, lasers for example in your DVD player or light in optical fibres for the internet. Barcode readers, laser printers, all those sort of things. The semiconductors that we're using are a little bit unusual, they're mostly used for infrared things such as gas sensing or IR cameras, and they are fairly exotic, but the nice thing about them is you can play around with combinations and do band-gap engineering for whatever material properties you'd like to have. And in this particular case what we like to have is a certain combination of those semiconductors originally identified by researchers at the TU Berlin [Berlin Institute of Technology] as the best choice for storage time. And into that we've designed triple barrier resonant tunnelling."

Triple what now? We're about as far from church organs now as it's possible to be, but don't worry ecclesiastical music lovers, it's coming. "[In an ULTRARAM cell] you have two barriers, with a small region in-between in which you confine your charge. It's a bit like an pipe organ," says Hayne. "The sound of the note depends on the length of the pipe because there's a certain wavelength that fits in your pipe. When you've got very, very thin layers the wavelength of the electron is quantised, so you've only got certain energies that are allowed. When you try to send an electron through a resonant

tunnelling barrier, an electron of the wrong energy sees the total thickness of the barrier but if you put it in at a resonant energy to the confined energy inside, then the barrier is effectively transparent." Got that? Good.

"By putting a voltage on," he continues, "we can change the barrier from being opaque to transparent. That gets us extremely long storage times, like flash, but with very fast, very low energy, switching."

PATENT PENDING

Resonant tunnelling is a well-known quantum mechanical effect, if you're a physics professor, but the diodes used by

Hayne's team are slightly different, "Normally you have two barriers and one well, where the charge is confined, but in ours we have three barriers and two wells, with the wells being different thicknesses, like they play different notes. We did that

because, when the thing is just sitting there, it looks like a really, really thick barrier, but put the right voltage across you can get those two different notes to move so they're aligned. This gives us more robust storage, but still gives us the resonant tunnelling effect."

Sounds great, when can we buy one? "We've got a US patent, with a European one pending," says Hayne. "We've already had a collaboration with IQE, the world's largest supplier of these compound semiconductor materials, and we've had interest from a very large company – but I'm not allowed to tell you who they are." Intriguing. ■

Ian Evenden

TOP LEFT: Two four-bit ULTRARAM arrays. The product is out of the theory and simulation stage and into small-scale production.

TOP RIGHT: Gallium, an element from group III, is a silvery metal with a crystal structure at room temperature, but does not occur as a free element in nature.

RESONANT TUNNELLING IS A WELL-KNOWN QUANTUM MECHANICAL EFFECT

YOUR NEXT PC

BUYER'S GUIDE

Build the best PC for your budget



KEY

Budget build

PC gaming is for everyone. Pick the parts you want to build a new, well-rounded PC for a good price.

Mid-range build

You want to run every new game at 1080p 60fps. This recommended build will see you through.

Advanced build

You're looking for the best PC on the market and superior components. But you still want to spend smart.

BUDGET BUILD

Enjoy 1080p gaming without breaking the bank



TOTAL
£1,128

MOTHERBOARD		GIGABYTE Z390 UD Gigabyte £98 Surprisingly feature-rich for a budget board, this proves a fine home for 8th gen Intel chips.
PROCESSOR		Core i3-9100f Intel £68 An incredibly nippy quad-core CPU for the price, Intel's 9th gen budget chip skips integrated graphics for affordability.
GRAPHICS CARD		GeForce RTX 2060 KO GAMING EVGA £299 Nvidia's latest GPU generation isn't just for top-end machines thanks to EVGA's take on the 2060.
COOLER		Hyper 212 Evo CoolerMaster £30 Even a budget build can benefit from a good CPU cooler, letting you enjoy a quieter, cooler system.
MEMORY		Vengeance LPX 16GB Corsair £73 16GB of RAM gives you plenty of breathing room when running multiple programs, and Corsair's selling this kit cheap.
POWER SUPPLY		CX-M Series CX550M Corsair £51 A UK price spike in our previous EVGA 500W pick opens the door for this quiet Corsair option.
SSD		MX500 250GB Crucial £53 Crucial's SSD range is fantastic value and offers good performance, too. A 250GB drive can hold your OS and essential programs.
HDD		WD Blue 1TB 7200RPM Western Digital £35 One terabyte of old-fashioned hard storage is the perfect home for all of your media, backups and storage-hungry games.
CASE		Neos Bitfenix £39 The Neos provides decent airflow, good support for 3.5-inch hard drives, and a fairly painless build experience.
DISPLAY		Optix MAG271C MSI £250 MSI packs huge value into this. You will have to start blaming your k:d on your broadband instead of your refresh rate though.
KEYBOARD		BlackWidow Lite Razer £62 Silent and deadly as its namesake, this BlackWidow board from Razer is a joy to type on. No number pad though, be warned.
MOUSE		Basilisk Essential Razer £35 Razer's 'essential' line conjures images of supermarket own-brand cereal, but this affordable Basilisk performs brilliantly.
HEADSET		HS35 Corsair £35 Deceptively luxurious for the price, Corsair's budget cans offer comfort and powerful low-end. Also colours. Very bright colours.

MID-RANGE BUILD

Our recommended build for playing the latest games



TOTAL
£1,630

MOTHERBOARD		X470 PRIME X470-PRO Asus £140 Tasteful RGB (if that's your thing) and substantial heatsinks make this a fine base for any AMD build.
PROCESSOR		Ryzen 7 3800X AMD £300 Once our top-end pick, AMD's Ryzen 7 is still as formidable but now realistic for mid-range builds, too. What a time to be alive.
GRAPHICS CARD		GeForce RTX 2060 KO GAMING EVGA £299 Nvidia's latest GPU generation isn't just for top-end machines thanks to EVGA's take on the 2060.
COOLER		Hydro Series H55 Quiet Edition Corsair £60 Tidy and quiet, the H55 will unlock our CPU's overclocking potential and look good through your case window while it does so.
MEMORY		Vengeance LPX 16GB (2x8GB) @2666 Corsair £73 16GB is the minimum amount of RAM we'd recommend for a system of this calibre.
POWER SUPPLY		CX 650W Corsair £62 It may not feature fancy modular design, but Corsair's reliable CX 650 is cheap enough to accommodate for our other part picks.
SSD		Evo 860 250GB Samsung £53 Samsung's Evo series has long been a stalwart of nippy r/w speeds and reliability, and this 250GB drive is very affordable.
HDD		WD Blue 1TB 7200RPM Western Digital £35 SSDs are great, but they're still far from cheap. This 1TB HDD will hold as many games as you will need.
CASE		Eclipse P400S TG Phanteks £75 The clean lines, intuitive build features and fantastic price cements the Eclipse as our mid-range case of choice.
DISPLAY		Predator XB271H Acer £329 G-Sync and up to 180Hz of overclocked refresh rate – Acer's 27-inch Predator is quicker than a simple AWP peek.
KEYBOARD		K68 Corsair £89 Compact and comfortable, gushing with colourful RGB and built on a sturdy brushed steel chassis.
MOUSE		Model O Minus Glorious £41 The lightest gaming mouse in production and one of the most responsive and comfortable out there. Look at those holes!
HEADSET		HyperX Cloud Kingston £74 Despite the budget price, we recommend this headset. There's simply nothing better for the money.

ADVANCED BUILD

Go above and beyond with a PC powerful enough to end worlds



TOTAL
£3,894

MOTHERBOARD		ROG Maximus XI Code Asus £337 Immense overclocking potential, and a look that's barely even recognisable as a motherboard. Space-age PCB tech.
PROCESSOR		Core i9 9900K Intel £460 Intel's new 5.0GHz, 8-core monster rules the roost in the CPU market. And it comes in a fancy nine-sided box too, so there's that.
GRAPHICS CARD		GeForce RTX 2080Ti Black Edition EVGA £1,080 EVGA's custom design is considerably cheaper than Nvidia's reference card, and with great cooling.
COOLER		Kraken X62 NZXT £99 The Kraken is the culmination of three of our favourite things: an infinity mirror, a 280mm radiator and slick braided cooling.
MEMORY		Vengeance RGB Pro DDR4-3200 Corsair £170 Faster than you could ever reasonably hope to make use of unless you plan to edit three 4K movies at once, plus all that RGB.
POWER SUPPLY		HX750i 80 Plus Platinum Corsair £136 Modular, custom cable kits, and a platinum efficiency rating. What's not to love about this Corsair PSU? Nothing, that's what.
SSD		XPG SX8200 Pro 1TB ADATA £120 A whole terabyte of M.2 storage with blistering read/write speeds, just waiting to be filled with Steam games you'll never play.
HDD		WD Blue 4TB Western Digital £87 With a large boot SSD, there's little need for a large, cheap SSD. Instead we've opted for a huge 4TB hard drive for all your bulk data.
CASE		Enthoo Evolv ATX TG Phanteks £135 The 5mm thick aluminium panels resonate with svelte professionalism, and the interior makes building inside this a dream.
DISPLAY		AW3418DW Alienware £839 34 inches of curved, beautifully presented 120Hz display with the added benefits of G-Sync. One for aesthetes and athletes alike.
KEYBOARD		G915 Lightspeed Logitech £190 Those low-profile keys feel like taking your fingers figure-skating. It's wireless too, so that's the cable jam dragon slain.
MOUSE		G502 Lightspeed Logitech £116 The Lightspeed is the very latest edition of Logi's loveable G502, and while it might look familiar nearly all internal parts are new.
HEADSET		Kraken Ultimate Razer £125 Thundering bass that doesn't impinge on clarity, plus a mic your Discord mates will definitely notice. In a good way.

EXTRA+LIFE

CONTINUED ADVENTURES IN GAMING



“There was some kind of expectation to at least not embarrass myself”

Getting ever so slightly better in **APEX LEGENDS**

I’ve been playing *Apex Legends* pretty regularly throughout its fourth season, thanks largely to finding a regular group of friends who jump in for an evening each week. It’s the first time I’ve spent any real quality time with a battle royale, and it’s been something of a revelation. I always sensed I *could* enjoy the genre, but I’d never taken the time to learn how to be good at them. I’m still not good at *Apex Legends*, but I am getting better. I’ve even won a round.

Finally, one evening, it happened: my team was announced as the champion squad. With this came a lot of pressure, although I’d be hard

PHIL SAVAGE



THIS MONTH
Failed to meet expectations.

ALSO PLAYED
Telling Lies, Sea of Thieves

pressed to explain why. I rarely pay attention to who I’m fighting in the game, let alone if they’re the champion team. So, it felt like there was some kind of expectation to at least not embarrass myself. That is not how things went down.

It’s not even like our previous match went spectacularly well. We were in the top three, with reasonably good (but not amazing) kit thanks to a successful period of



pillaging other players’ supply drops. But we only had a couple of scrappy, early kills from an almost disastrous encounter in a train station. Since then we’d barely seen another player, and got cocky as a result.

Former PCG editor-in-chief Samuel Roberts and I split off from our teammate, PCG contributor Tom Hatfield, to hijack yet another supply drop. It was a mistake. Hatfield, who stayed back to provide overwatch from a nearby cliff, was ambushed. We ran back, but he was already

FINALLY IT HAPPENED: MY TEAM WAS ANNOUNCED AS THE CHAMPION SQUAD



Getting kills like a competent player.



This is what a successful jump looks like.

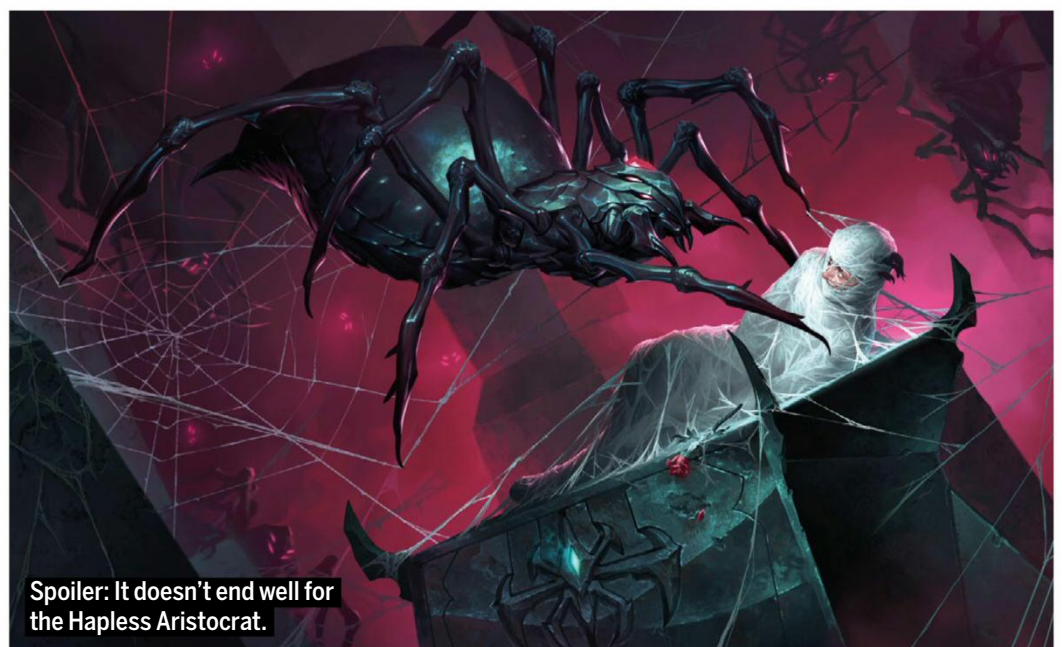
downed. We managed to take out Tom's attacker, but were flanked by his teammates. And like that, we were done. Third place; five kills. Not exactly spectacular.

ROYALE DECREE

Still, deserved or not, we were now the champion squad, and I was determined we'd take it at least somewhat seriously. That meant none of my usual recklessness: pushing for my team to land on the train, land on the party airship, land at the hot zone – all the places that guarantee a quick fight and, usually, an early death. Instead, I suggested the tower at the centre of the map, which is often quieter than its huge, imposing presence would suggest.

Only Samuel came at it from the wrong angle. We were too low. We didn't have enough speed. We crashed onto the cliff that separates the tower from the city, and immediately a message appeared "RETURN TO THE BATTLE!". We'd landed out of bounds – the game giving us 30 seconds to return to the map. One problem: we were stuck.

The ledge I'd landed on faced inwards at such an incline that I couldn't run up it. I was wedged in. Helpless, I looked bitterly at the image of my character hanging from the nearby banner, advertising a proud member of the champion squad to all the map. The timer ran out, and our characters went down. The champions were out. ■



Spoiler: It doesn't end well for the Hapless Aristocrat.

"I didn't expect to love its storytelling"

Finding narrative in **LEGENDS OF RUNETERRA**

▶ ROBIN VALENTINE



THIS MONTH
Learned what a 'clump of whumps' is.

ALSO PLAYED
Slay the Spire, Stoneshard

There's a lot to like about Riot's new card game. I was drawn in by its generous business model, which does away with randomised packs entirely. I'm having a blast with its accessible yet intricate strategy, where every card feels impactful. But what I didn't expect to love was its storytelling.

It's a game that proves how flexible the medium can be in terms of crafting a narrative. The 1v1 fights of course don't allow for a traditional, linear story, but through the cards' art, descriptions, in-game mechanics, and combat dialogue, various subplots reveal themselves.

Take Arachnoid Sentry – a spider card that allows you to stun a unit. In the art and lore, it depicts the spider looking down from its hiding place on an arrogant noble arriving for a date with the mysterious Elise. The mechanics reflect what happens next – the spider ambushes and kidnaps the man, and other spider cards show him lost in a dark, arachnid-filled mansion. Hapless Aristocrat

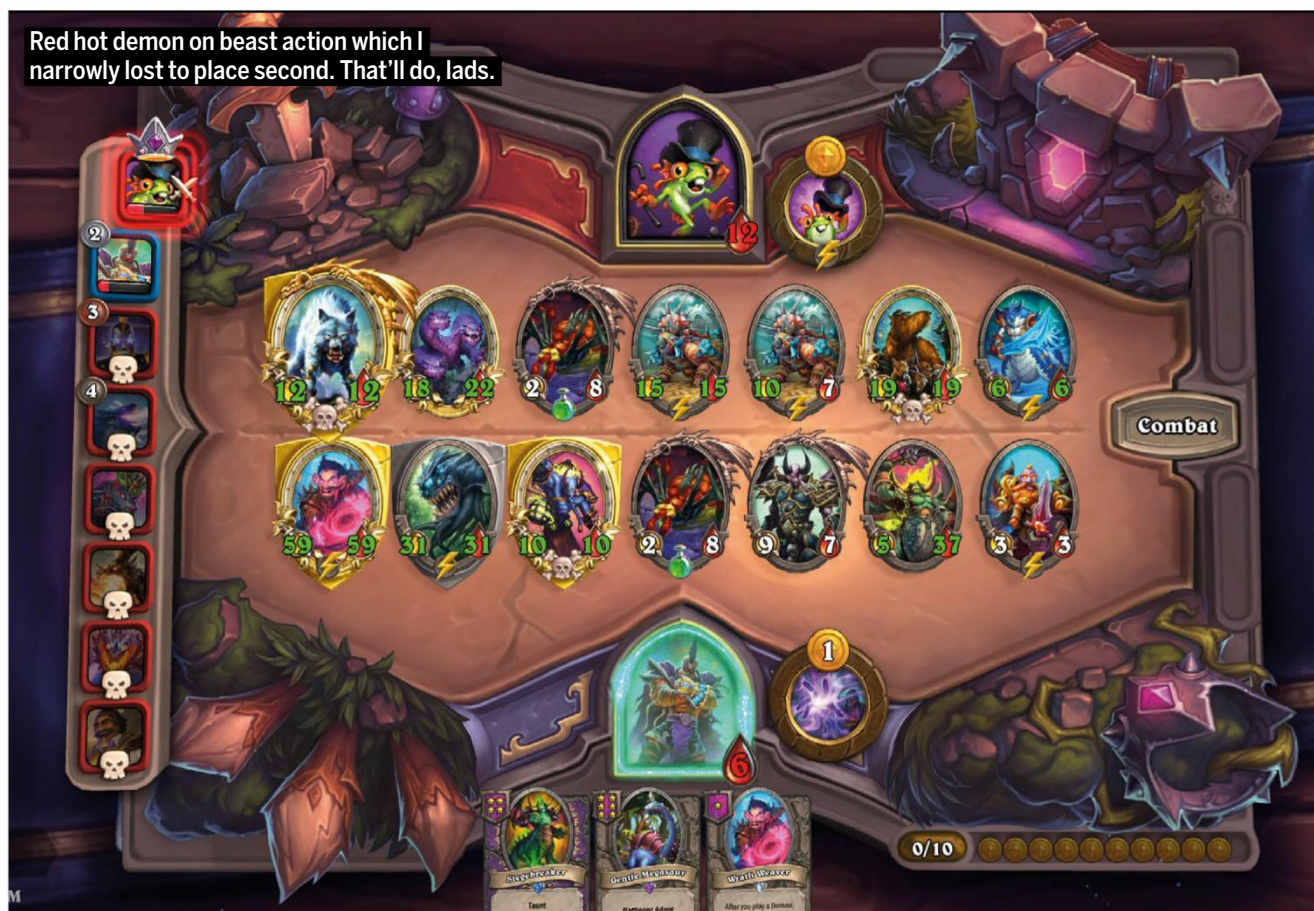
represents the man himself – a weak minion that, when it dies, summons a spider to replace it.

Over time, you notice more and more connections, building up the story organically as you play otherwise purely competitive matches. They paint a vivid picture of Elise, actually a spider-like succubus who both empowers and is empowered by her skittering minions. As you deploy them, the cards even talk to each other, the aristocrat babbling in her presence, and Elise expressing her distaste when a spider dies.

PORO SHOW

It's one of a whole tangle of narratives, and each is designed to naturally emerge from different playstyles. Cards that go well together are more likely to have links and interactions, and their mechanics reflect the stories being told. Babbling Bjerg, a madman who raves about monsters lurking in the wilds, draws those monsters into your hand. The Lonely Poro helps summon more of his kind – and switches to being a Jubilant Poro when they appear. It's a wonderfully evocative approach.

So much videogame storytelling is done purely through cutscenes and text – aping other mediums. *LoR* is a welcome demonstration that that doesn't have to be the be-all, end-all. Even a 1v1 competitive card game can, with the right attention to detail, draw you into another world. ■



“Trying to cobble together a warband from the halt and lame minions”

The latest update to **HEARTHSTONE BATTLEGROUNDS** is dragons all the way down

For some people, going to the cinema solo is a deal-breaker because of the worry about being silently judged as a dangerous loner. That doesn't bother me, but I have started worrying about what the staff at my local bar make of me playing endless *Hearthstone Battlegrounds* while drinking dark and stormies on a Saturday night. In my defence, my other half is out of town, and the new update to the auto-battler-inspired mode is really good.

In a late February update, Blizzard added 18 new minions, 12 of which were dragons, and seven new heroes. Most of the new minions were designed exclusively for *Battlegrounds* and enable spicy synergies. Red Whelp deals scaling damage based on the number of friendly dragons, Drakonid Enforcer gains power from divine shields popping, and Hangry Dragon grows whenever you win a round. In the same patch, ten underperforming minions were rotated out to prevent the pool from getting too crowded.

Many things are impressive to me about the success of *Battlegrounds*, but what surprises me most is

▶ TIM CLARK



THIS MONTH
Drinking while 'forcing demons' in Blizzard's auto-battler mode.

ALSO PLAYED
Destiny 2

Blizzard's ability to keep refreshing the mode without sacrificing what made it fun in the first place.

Part of the reason the dev is able to make big changes to *Battlegrounds* at such a regular clip is because the mode is ostensibly free. Yes, you need to buy a few packs to get access to a third hero choice at the start of each game, but it's hardly necessary. That means Blizzard can remove a hero without much warning, without worrying about players grizzling about wasting cash on crafting him.

ANGER MANAGEMENT

Another big difference between *Battlegrounds* and regular

MOST OF THE NEW MINIONS WERE DESIGNED EXCLUSIVELY FOR BATTLEGROUNDS

Hearthstone is that I don't get anywhere near as furious. Even when you take a bad beating in *Battlegrounds*, you still have some amount of fun trying to cobble together a warband from the halt and lame minions you've been offered. In contrast, I often feel like games of Standard can be decided on turn three and the rest is just bleeding out or coasting to victory.

A colleague on GamesRadar puts it more succinctly, "*Battlegrounds* is about the excitement of what can go right, whereas Standard is the fear of what could go wrong." Because finishing anywhere between first and fourth out of the eight players generates positive MMR, competing in *Battlegrounds* feels less brutal and binary. Saving a bad run by pivoting to Murlocs and scraping fourth is almost as good as coming first.

Where I was wrong about *Battlegrounds* is I thought that interest would dry up due to lack of depth, but there's a ton to think about in any match: timing when to Tavern up, deciding to switch strategies, refining how to exploit the hero powers... there's real mastery here. Just be aware that if you play drunk you'll convince yourself that the barman is backing you to win. ■

“Quietly placing pieces for vehicles to cross over is weirdly meditative”

Finding building nirvana in **BRIDGE CONSTRUCTOR**

Recently I've been playing a lot of *Dragon Quest Builders 2* – it's bright, funny and a prettier block-based builder than *Minecraft*. It was one of my favourite games of last year, but as much as I love it I've hit a wall. I'm getting sick of crafting.

There's nothing worse than planning a cool castle build, getting 90 per cent of the way through all of the furnishings and detailing... then finding you've run out of sand to make the block you need to make the stairs version of said block for your construction. It turns a great, zen building session into a dull mining one. It completely breaks the flow.

Burned out by the back and forth of gathering and crafting I decided to seek out something that takes joy in the purity of construction. And so I turned to *Bridge Constructor* – a game as simple as its title.

Within 30 seconds of booting the game you're making things. No chopping trees for wood or mining stone to make supports – just instant pieces placed with a few clicks. But just because it's easy it doesn't make it thoughtless – there's an art to

DANIELLA LUCAS



THIS MONTH
Reached Enlightenment
through steel and concrete.

ALSO PLAYED
FFXIV, Dragon Quest Builders 2

building the perfect bridge for any given crevasse. Your materials are limited – wooden planks, steel beams, concrete supports and wire cabling, but that's all you need.

The pared back options and focus on overpasses are the perfect combination to reach building nirvana. Quietly placing pieces for vehicles to cross over is weirdly meditative. Nothing else in the world matters, just me and my bridge.

BUILDING CONFIDENCE

I thought that perhaps building nothing but flyovers would get to me eventually, but there's a puzzle to

every gorge crossing, a mystery to solve to span each canyon. By having such limited materials and budget to play with the focus becomes efficiency through experimentation. Sure, a few of my most pretty bridges have crumbled into the sea and necessitated an ugly rebuild to get travellers from A to B, but there's a beauty to that cycle of completion that other building and crafting games lack. When you've gathered all of your materials and finished your castle it can feel kind of empty – the fun is the creating not the finishing. *Bridge Constructor* constantly feeds that cycle, there's always another bridge to build waiting for you.

Sometimes having too much choice can be paralysing – with so many things to craft, what if you settle on the 'wrong' one and make something you don't like, wasting precious logs in the process?

You might not be able to make fortresses, airships or giant statues of 8-bit character art, but that doesn't make *Bridge Constructor* any less of a builder. The purity of only being able to make one kind of things is weirdly freeing. It's the perfect break when the never ending cycle of crafting gets too much. ■

NOTHING ELSE IN THE WORLD MATTERS, JUST ME AND MY BRIDGE





FORTNITE

Spy-themed update makes stealthy players feel seen. *By James Davenport*

I don't build for the first five or so minutes of *Fortnite* matches anymore. After the recent *Fortnite* Chapter 2 Season 2 update, you'll catch me crouching in a vent doing my best Agent 47 impression, holding incapacitated thugs up to retinal scanners at the bottom level of a massive subterranean base, or dressing up like one of those very thugs, trying to catch another player off-guard with a surprise shotgun blast to the face.

I'm not even thinking about the encroaching storm or how terrible I still am at constructing elaborate staircases into the sky. This isn't exactly *Fortnite*, it's an urgent stealth game about intel and deception inside of *Fortnite*.

The update adds some elaborate new locations with spy bases, intricate and dense new areas littered with secret passages, sprawling ventilation shafts, locked doors, and AI-controlled henchmen patrolling it all. Cameras and turrets are everywhere too, forcing you into stealthy play from the get-go.

Each base houses a vault packed with enough loot to leave you set for the rest of the match. Thing is, you need a master keycard to open the big vault. Finding it requires shaking down the right henchman to find the location of a unique area 'boss',

NEED TO KNOW

RELEASE
February 20, 2020

DEVELOPER
Epic Games

PUBLISHER
In-house

LINK
fortnite.com

essentially a henchman with extra health and shields, wielding powerful mythic weapons. You can technically take down the boss immediately, but skulking around to thin out the henchman army and other players while gathering loot is definitely the best bet. Besides, if other players are in the area, taking on the boss immediately is a great way to tell everyone exactly where you are.

BOND LIFE

Another problem: the best loot is behind locked doors, and locked doors require a henchman's eyes to open. My favourite tactic is using phone booths to disguise myself as one of the goons, which lets you open most doors and avoid the suspicion of cameras and guards, at which point *Fortnite* becomes *Hitman*-lite. Blending into the scene and deceiving other players by role-playing a robotic NPC is a great joy.

You can also shoot a guard to incapacitate them and shake them down for intel, which briefly shows the locations of all henchmen and the keycard location on the HUD, or carry them around and hold them up

to retinal scanners like the big meaty keys they are. I'm not used to having this many options in *Fortnite*.

These new spy zones make taking big risks incredibly appealing rather than daunting. I typically avoid popular arenas and favour slower, more tactical play, but these areas let me keep that playstyle while I'm in a big crowd of other players.

I SPY

If I successfully navigate the perils of a spy zone, either killing everyone onboard or infiltrating without a soul catching sight of me, and get out with the kind of kit you typically only get ten minutes into a match, I already feel like a winner. Most spy-base landings are tense, complete experiences on their own.

In one particularly crowded match, I thought I'd put my *Metal Gear* skills to use and hid in a cardboard box right next to the

IT'S AN URGENT STEALTH GAME ABOUT INTEL AND DECEPTION

entrance of the vault on the yacht spy base. I sat and waited and listened as all the other players eliminated one another and every henchmen until the victor rolled up to the door, ready to claim their spoils. But I spoiled it. Popped out and juiced 'em with an SMG. I took it all with absolutely no regrets. It's really easy to get the jump on other players too, whether you're in a box or not. Many vents and secret passages run through each dense, layered zone, and are perfect for improvised ambushes and getaways.

With every new *Fortnite* season, I'm always asking myself where the hell it can possibly go next. Battle royale feels like a played out genre these days, a known entity gradually moving from its status as phenomenon and into normalcy. But Epic doesn't want to settle. This chapter isn't about new items and weapons and traversal, it's about playful experimentation with the entire genre. Shifts in the item pool and meta were losing me by *Chapter 1 Season 7* or so, but I'll keep coming back every couple months to play the new game inside the game. ■



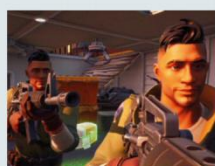
SPY HIGH

Get familiar with *Fortnite*'s new tools for creative deception



CARDBOARD BOX

You know what to do. Crouch down and hide in it.



DECOY GRENADE

Throw for smoke and a holographic distraction.



TELEPHONE BOOTHS

Pop in to dress as a henchman. Blend in with the boys.



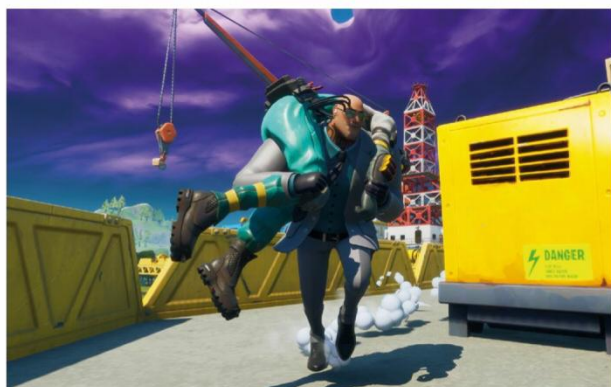
HENCHMEN

Shake 'em down for intel and gear. Human keys for retinal scanners.

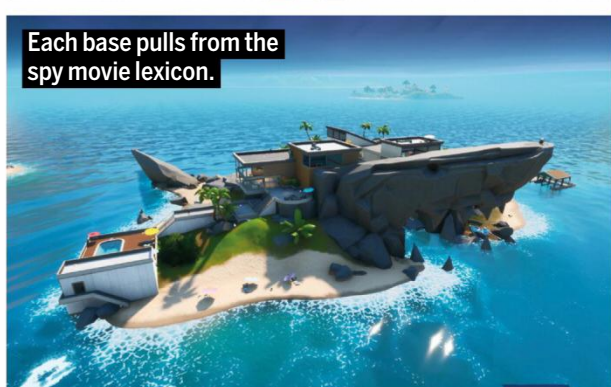
Fortnite is still A Normal Game.



Not a screen from *Hitman*, but *Fortnite*.



Each base pulls from the spy movie lexicon.



This boss drops a grapples with infinite uses.

Ciri and a sweetroll after a vampire hunt well done.



Yennefer most often uses what looks like master Destruction spell Lightning Storm.

THE ELDER SCROLLS V: SKYRIM

Geralt and friends enter Skyrim. *By Lauren Morton*

The *Witcher* and *Skyrim* have been fertile crossover ground for years. *The Witcher* has great characters.

Skyrim has great mods. There are dozens of follower mods for *Skyrim* – custom characters to join the Dragonborn on their adventures when you tire of Lydia carrying your burdens. A few modders have created a series of *Witcher*-themed followers based on their looks and lines from *The Witcher 3: Wild Hunt*. With *The Witcher* heavily on the brain since its TV debut, I decided now was a perfect time to take my favourite trio for a monster hunt in Tamriel.

When I start out my new *Skyrim* save as Geralt, I wake up in the Companions guild hall in Whiterun thanks to the Alternate Start mod that allows me to begin the game as someone other than a prisoner on the chopping block. Ciri and Yennefer don't appear to greet me though. Like Geralt in *Wild Hunt*, I've got to find them. Luckily, mod creator Levionte gives away where they are. Unluckily, they're both at The Winking Skeeve.

If you don't have *Skyrim*'s entire map memorised, The Winking Skeeve is in the town of Solitude which is in the northwest part of the region. It's a fair trek from the centre of Skyrim and the road to Solitude quickly becomes a headache. Geralt is level one and I am far too impatient to hold his hand as we make our way north. I get chased by two sabrecats. I give some side-eye to the two giants always lurking just west of Whiterun.

Eventually I shimmy down a cliff and stumble into a bandit encampment blocking the side of the river I'd been following. They'll make a great warmup for monster hunting. All five are easy to dispatch with the help of a few potions and poisons (which I'd decided I should make

EVENTUALLY I SHIMMY DOWN A CLIFF AND STUMBLE INTO A BANDIT ENCAMPMENT

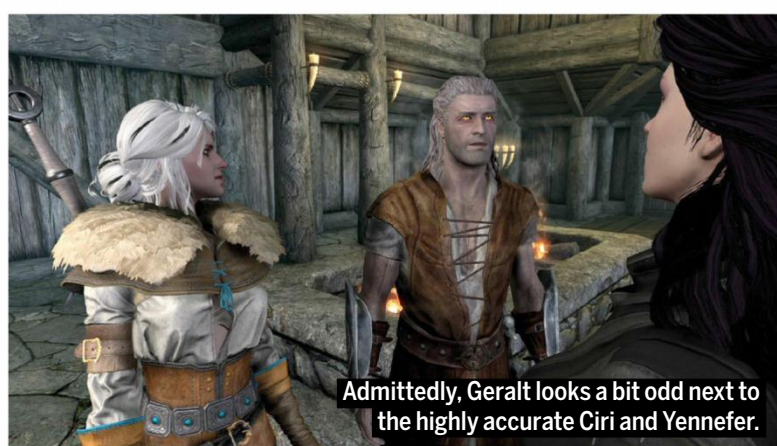
heavy use of as a witcher) and I carry along my way towards Solitude.

Finally inside the city, Geralt heads for The Winking Skeeve. At first, I don't spot my two would-be followers and I worry I've gotten something wrong. I finally find Yennefer and Ciri upstairs, as true to their *Wild Hunt* appearances as I could hope for. Levionte has done a great job sculpting both faces and has them set up so that their lips move with their dialogue.

Those, Levionte did borrow from *Wild Hunt*, repurposing voice lines as greetings, combat yells and other various responses. Yennefer in particular often comments on our surroundings whether we're in a bar, dungeon, or adventuring, with appropriate lines. She does have a



At last, we score a proper monster hunting contract from Morthal's Jarl.



Admittedly, Geralt looks a bit odd next to the highly accurate Ciri and Yennefer.

MUGSHOT MUCKUP

My Geralt just barely passed muster

There are several presets available for the expanded character creator mod called RaceMenu for turning a character into Geralt. Some are better than others, so I landed on this Geralt face reminiscent of *The Witcher 2* by Vengeance2. I always seem to struggle bending RaceMenu to my will, so my Geralt ended up slightly, well, different. Fortunately the scar and hairstyle were close enough – along with the Witcher Eyes by Oaristys – that I decided my Geralt would suffice.



» habit of repeating one particular line, “I can scratch it if it itches, but I fear that’s all.” I can’t for the life of me remember the original context of that one... Otherwise, they fit remarkably well into *Skyrim* without some of the little tells – absent or low-quality voice work – that usually give away modded characters.

TEAM BUILDING

There’s no joyful reunion to be had, alas. I simply speak to both Ciri and Yennefer and tell them to follow me and we’re all set to go. Back outside, I sniff out our first contract. The executioner near the town’s entrance needs help finding an escaped bandit that’s fled to a hideout north of town. That’s not exactly a monster contract, but I’ll take it anyway.

I won’t waste much space on clearing Broken Oar Grotto. Yennefer and Ciri made absolute wreckage of every bandit inside. Geralt struggled to unsheathe his sword before they thoroughly annihilated the entire operation. Yennefer relies on magic and fights at range. Her primary ability is Palpatine-ing things to death by shooting purple lightning out of her fingers. She’s also able to necromance dead enemies back to life as her mindless thralls. More than one bandit was sent to kill his still-living brethren. Ciri opens most fights by teleporting behind an enemy through a portal meant to mimic her Blink ability in *The Witcher 3*. Once she closes in, Ciri dispatches most enemies in just a couple sword swings.

After thrashing Hargar and his mates, I decide we need to find a proper monster hunt. We fast travel to the spooky-looking cave called Orotheim that I passed en route to Solitude. It’s full of human bandits, which we kill. I try Hamvir’s Rest next. It’s got undead skeletons, but only a couple. Yennefer and Ciri keep making short work of each. At a loss, I decide we’ll harass the giants.

Finally, something is able to give my two bad broads a run for their coin.

The giants are a tougher fight, soaking up Yennefer’s lightning and swatting Ciri straight up into the sky. Both are downed more than once, forcing Geralt to dance around dodging oversized cudgels waiting for a rescue. He’s still level one, you see. Eventually we manage to taunt both giants into following us into the nearby Greymoor Fort where a group of bandits help us take down the beasts. We kill them too, since we happen to be in the neighbourhood. So far we’ve only managed to hunt down several groups of bandits and a pair of giants that really didn’t deserve to be hassled. If this were *The Witcher 3*, Geralt would have even made friends with the big guys.



AFTER THRASHING HARGAR, I DECIDE WE NEED TO FIND A PROPER MONSTER HUNT

I pull up my map, trying to recall where to find some real monsters, which is when I spot Morthal.

VAMPIRE DIARIES

Morthal is spooky, but it had been long enough since my last visit that I’d forgotten what kind of quest I’d find there. Geralt, Ciri, and Yennefer saunter into town and wouldn’t you know it – there’s a mystery afoot. The local jarl is into some mystical hoodoo and a local man’s house has burned down, killing his wife and daughter. This sounds like Geralt’s brand of grim and twisted story.

Not long after Hroggar’s house burned down with his family inside, he shackled up with a new woman named Alva. The rest of Morthal’s townsfolk assume Hroggar murdered his family to start up with this new

woman – because of course he did. After a conversation with the jarl, our trio sets about town for leads. I suppose I was meant to talk with folks to gather clues, but Geralt is itching for a proper monster fight and the fact that people keep telling me not to go out at night suggests there are definitely monsters about.

I cut to the chase and break into Alva’s house. It’s empty, at first glance, but adventuring into the cellar below puts us face-to-face with Alva herself. She’s sleeping in a coffin and not at all thrilled to be awoken. Before Geralt can take stock of the situation, Ciri, Yennefer and Alva are in the thick of it. The lady vampire is no match for Geralt’s Angels. After dispatching the lady vampire all-too-quickly, I flip through her diary. More vampires at large, it says, and they absolutely had a hand, or fang, in killing Hroggar’s family.

This wouldn’t be a case for Geralt without a touch of the supernatural (beyond vampires, that is) so we track down the ghost of Hroggar’s young daughter to let her have her say. It turns out she was the collateral damage in a plan to enthrall the entire town as a permanent blood drinking source. The vampires mucked up making her death look accidental.

With his name cleared, Hroggar and the other townsfolk decide they’d like to go on a real vampire raid. Torch and pitchfork style. We all march out of town together in the dead of night, grimly serious and seeking retribution. The would-be militia chickens out at the mouth of the lair, of course, leaving Ciri and Yennefer and I to go first.

The ladies make quick work of the vampire’s thralls in the first few rooms of the lair but near the back we’re finally face-to-face with the master Movarth himself. It takes more than just a few strikes to do away with a master vampire, finally a monster worth hunting in *Skyrim*.

Like two super saiyans, Morvarth and Yennefer shoot brightly coloured attacks at one another as Ciri dives behind him with her blink ability. Geralt stands on a ledge above taking screenshots because he is somehow still level one. Morvath succumbs to Ciri’s silver sword and our crew collects a hefty reward.

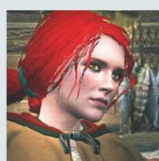
In the end, Ciri and Yennefer ended up a bit overpowered as companions go, but they fit in so well that I’m tempted to string up an entire collection of *Witcher* mods for a new playthrough. We hunted more men than monsters by the end of the day, but that’s the life of a Witcher after all, isn’t it? ■

FOLLOWER FELLOWSHIP

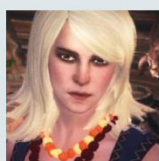
Levionte contributed to other *Witcher* companion mods



GERALT
If you want to bring Geralt along instead of being him you can as he’s also a voiced companion.



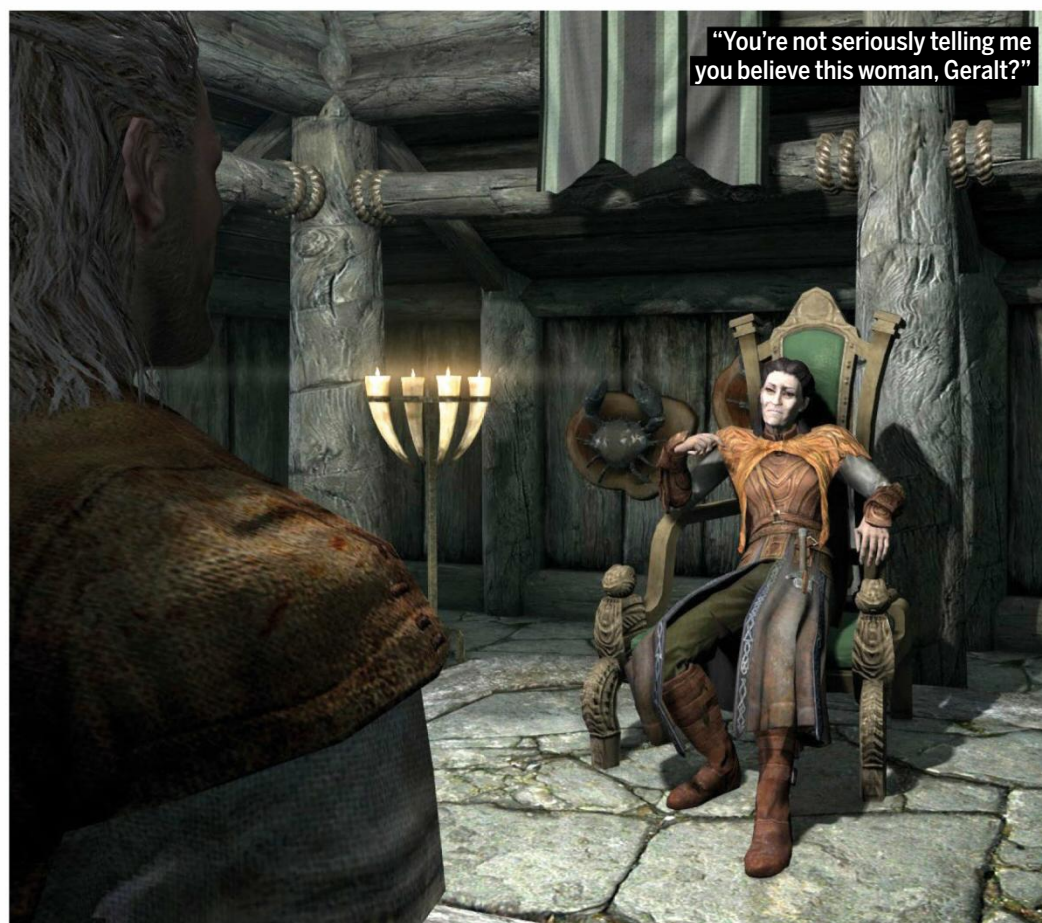
TRISS
Geralt’s other main paramour, Triss Merigold is another magic-wielding companion.



KEIRA
Another lodge sorceress, Keira Metz, can lend her magical hands in combat.



CERYS AN CRAITE
Cerys from *Wild Hunt*’s Skellige Isles is a two-handed weapon wielder.





MASTER DOOM ETERNAL'S BATTLEMODE

Own the arena: rip into demons or tear up the Doom Slayer. *By Emma Matthews*

NEED TO KNOW

DIFFICULTY
Hard

TIME
10-20 hours

VITAL LINKS
Doom Eternal:
Everything we know:
bit.ly/2v8dX8U
12 Minutes of Doom Eternal's Battlemode:
bit.ly/391HNdN



CONQUER THE CAMPAIGN

1 The best Doom Slayers instinctively switch between weapons and rarely pause. What better way to ingrain that muscle memory than by completing the campaign? Increasing your toolset ensures that you remember to use everything.



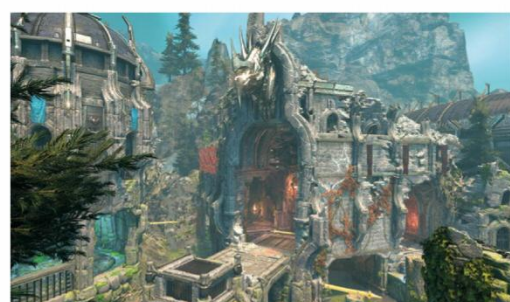
DEMONIC EXPERT

2 With five demons to choose from, settling on a main may be tricky. Test each demon to get a feel for their style, and learn at least two properly. Familiarise yourself with the offensive and defensive loadouts to complement your teammate.



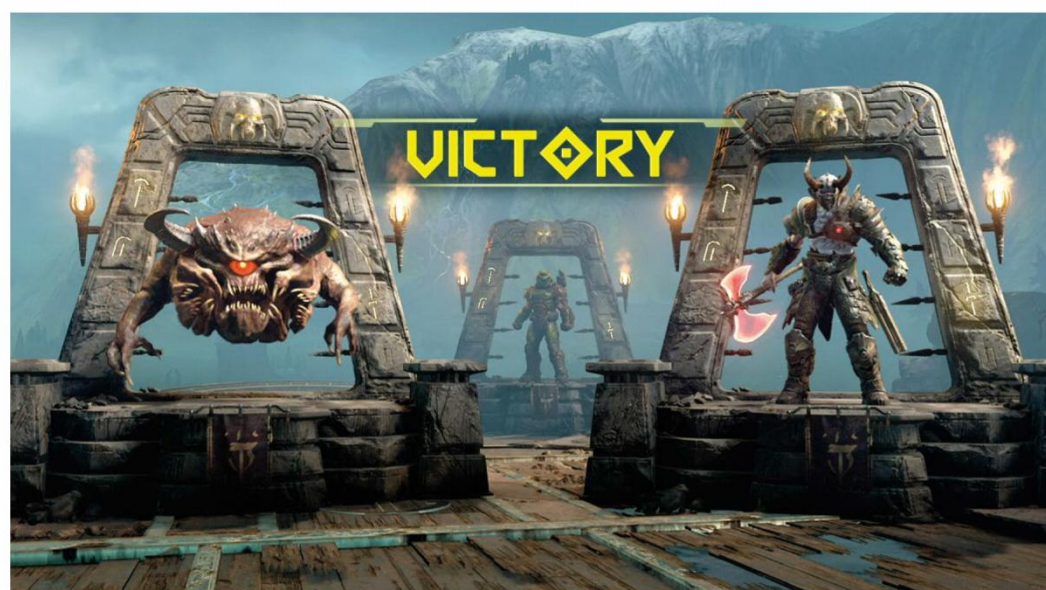
CATASTROPHIC COMBOS

3 Stack your abilities to maximise damage on both sides. Place environmental hazards and combo your abilities as the demons. Flame Belch enemies, throw grenades and use the Meat Hook to rack up damage as the Doom Slayer.



WELL TRAVELLED

4 There are six maps at launch and more to come in the future. Spread your playtime across all maps and memorise the layout of each. Anticipating where the opponent may go will give you a competitive edge in a match.

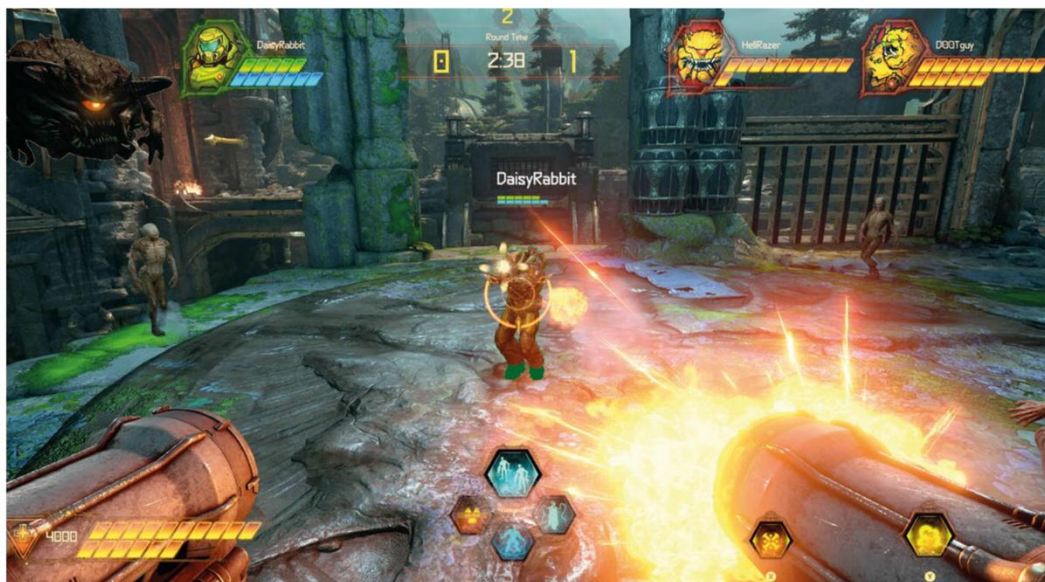


TEAM UP

5 Battlemode only requires three players, making it an easy sell to friends. Playing 2v1 with mates boosts your confidence, while opening up the opportunity for some playful trash-talking.

PRO PLAYS

6 There's no way you've learned every implementation of the tools available to you, but you don't have to spend hours toiling away to see results. Watch some streamers and pros to pick up helpful tips and tricks.



GET BUFF

7 Between rounds, all players select an upgrade. Increasing health is a safe bet, but tailoring buffs to suit your playstyle is ideal. Instant resurrections and team heals keep the dream team alive. Doom Slayers benefit from increased speed and damage.

GIVE 'EM HELL *Become the belle of the brawl*



SUMMONING SPREE

8 One for the demons. It's easy to get caught up in a fast-paced fight, but don't let the Doom Slayer's aggressive approach distract you from summoning. Keep an eye on your cooldown counters, spawn demon AI, and place some hazards.



HIDE AND SEEK

8 The Doom Slayer can only seal a round by eliminating both demons, and they can be resurrected. Individually these beasts are weak so – unless the Doom Slayer is very low on health – take cover and wait for your partner to return.



BORN TO FLY

10 Take to the skies whenever possible. Jump pads and monkey bars line the arena to propel you to new heights as the Doom Slayer. Use airtime to determine your next victim, and pair jumps with a dash to escape fatal damage.

BLOCK LOOT

11 As the demon duo, time your loot blocks to starve the Doom Slayer from replenishing their resources. Stinging them a couple of times in a row results in an abrupt end to a round. You cannot spam these.



SHARE THE PAIN

12 Bring both demons down in quick succession by dishing out damage equally throughout the round. Coerce them into ganging up on you to land double Flame Belches, and ensure both are low on health before eliminating the first one.



TOTAL PEACE

PART II

Peace heats up in my attempt at a pacifist play-through of *Total War: Three Kingdoms*.

By Rick Lane

THE RULES

- 1 Cannot declare war
- 2 Cannot directly attack armies
- 3 Can defend from attack

Pease may be rarer than potatoes in ancient China, but that won't stop me from trying to play *Total War: Three Kingdoms* as something vaguely resembling a pacifist. My last attempt wasn't smooth sailing. I may have started the game at war with the tyrant Dong Zhou and his vassal, the Han Empire, and I may have used this as an opportunity to expand my own borders. I also might have convinced my coalition partner Liu Bei to murder the son of a warlord named Tao Qian. But in my defence, Tao Qian murdered my faction leader Cao Cao's father and then died before I could exact my revenge. As the saying goes 'An eye for an eye always leads to peace'.

Fortunately, my latest attempt kicks off in more promising fashion. Dong Min, the adopted son of Dong Zhuo who assassinated the tyrant, assumed his power, and spent most of the early game trying to 'vassalize' my faction, finally makes Cao Cao a reasonable peace offer. Not only will Min end hostilities with us, he'll pay us around 3,000 gold for the privilege. I could use a couple of new farms. Sold to the megalomaniac in the north!

There's also a little spring cleaning to do from last time, in the form of eliminating a southern warlord named Liu Yao, who boldly declared war on me despite having the all the military strength of a child holding a stick. Yao managed to take one of my trading ports before being killed by my general Dian Wei during a counter-siege. All that remains is to seize the faction's last remaining city, which Wei achieves with minimal casualties.

The destruction of Yao's faction marks the first time in my campaign where I'm not actually at war with anyone. Obviously this is fantastic news, but I've little mind to celebrate. My campaigns against Yao and Dong Min's vassal, the Han Empire, have, entirely by coincidence, considerably strengthened my own faction.

Again, this sounds like a good thing, but the stronger you are in *Three Kingdoms*, the harder it is to maintain affable diplomatic relationships.

SETTING SUN

Most of my northern border is giving me the stink-eye. On the diplomatic map, the previously friendly Yuan Shu is slowly turning red with warlike anger, while the handful of settlements held by the Yellow Turban warlord He Yi are almost purple with rage. My biggest concern, however, is off to the west, in the form of Lady Wu.

I should point out that at this point in the game, I don't actually know about Lady Wu. The faction is officially controlled by her son, Sun Ce. But he will be killed in some far-off battle shortly, at which point Lady Wu will assume control of the faction. Either way, the Sun faction controls most of western China, stretching right along both my western and southern borders. They're not hostile toward me at present, but they are much more powerful than me. If they declare war, I might as well

jump into the Yangtze and swim for the Pacific.

All told, central China is one giant powder keg waiting to explode.

Naturally, I try to pour water on it, buttering up both Sun Ce and Yuan Shu with a little diplomatic manipulation. He Yi, however, hates me so much that it's mechanically

impossible for him to hate me any further. There isn't enough Lurpak in the world to grease that relationship. Since I can't dampen He Yi's fuse, I decide to try and light it in a way that best suits me. I take my two armies, march them into He Yi's territory, and just sit there, letting them spoil the landscape like extremely sharp wind turbines. After a few turns of my provincial squatting, He Yi's bubbling pot of hatred boils over and he declares war.

With only three settlements to his name, I figure He Yi will be easy to pacify. Turns out he's got three huge armies crammed into his scrap of territory, and what I expect to be little more than a skirmish turns into a fierce grudge match. Cao Cao's own army suffers a nasty early defeat that almost puts an end to the war before it's started.

Forced to retreat and rethink, I realise I can't match the sheer numbers of He Yi's peasant forces. I decide to invest in technology, recruiting two units of repeating crossbows and two units of artillery for my second army, led by Dian Wei. Wei proves instrumental in overcoming

He Yi. Not only do my trebuchets and ballistas cut through Yi's peasant masses with ease, Wei personally kills several of Yi's lieutenants in one-on-one duels. The war goes on for longer than I expect, but in the end Yi's resistance ends with a whimper. He foolishly lays siege to one of my newly acquired settlements with just 400 men, and is cut down by the peasant garrison that was so recently on his side.

Yeeting Yi into the afterlife may have proved more difficult than I anticipated, but it's also more rewarding than I expected too. During the conflict I earn the title of Marquis and 5,000 gold as a reward, which I spend on improving infrastructure and raising a third army led by Cao Cao's wife Lady Bian. Originally a general in Dian

ALL TOLD, CENTRAL CHINA IS ONE GIANT POWDER KEG WAITING TO EXPLODE



My glaive troopers make short work of Lady Wu's cavalry.



THE KEY PLAYERS <i>Warriors with dynasties</i>	 XIAHOU DUN Xiahou Dun is Cao Cao's right hand man.	 LADY BIAN Cao Cao's wife and general in her own right.	 DIAN WEI Master duellist and Cao Cao's formidable ally.	 YUAN SHU Yuan Shu is a minor northern warlord.	 LIU YAO Shu's opposite: a minor southern warlord.	 YUAN SHAO Cao Cao's other coalition partner. Bit of a dick tbh.
	 LU BU The greatest warrior of the Three Kingdoms period.	 LADY WU Leader of the Duchy of Wu. Cao Cao's biggest threat.	 HE YI Charismatic warlord and part of the Yellow Turban Rebellion.	 DONG MIN The Imperial usurper. Murdered his adoptive father.	 CAO CAO Our peaceful faction leader and strategic mastermind.	 LIU BEI Cao Cao's coalition partner and the loveliest warlord in China.

» Wei's army, Bian fell out with Wei during the war with He Yi. So I temporarily put her on the bench. Now she has a force of her own, modelled after Dian Wei's mixture of old timey swords and arrows, alongside more modern crossbows and artillery.

China has also changed dramatically while I was busy fighting Yi. The usurper Dong Min has himself been usurped by the legendary Lu Bu, China's greatest fighter and bane of *Dynasty Warriors* fans worldwide. Lu Bu celebrates his new position by declaring war on me, because Lu Bu. I'm not worried by this, Lu Bu's territory is still a fair way from my own. More concerning is Lady Wu, who is now officially in charge of the Sun faction and has busied herself making it the largest in China.

Meanwhile, on my eastern border where all my allies lie, trouble is also brewing. My council wants me to destroy my coalition partner, Yuan Shao, while my other coalition partner Liu Bei asks me to go to war with Yuan Shu (not Shao) on his behalf.

Normally I wouldn't dream of this. I'm an advocate of peace, after all. But Liu Bei did me a solid getting rid of Tao Qian after Qian murdered my dad, and he's also offering a fat purse in exchange for my declaration. Meanwhile, Yuan Shu is getting increasingly frowny at me across the border, so I get the feeling war is inevitable.

WU SHOO

I decide to try to deal with all these problems at once. I trigger a proxy war between Lady Wu and Yuan Shao, in the hope they might weaken each other enough so that, when the time comes, I'll have a fighting chance against either of them. Meanwhile, I decide that I will accept Liu Bei's offer, but then I'll immediately sue for peace with Yuan Shu, meaning I can take the money without actually going to war with Shu in a practical sense.

Because I'm a massive idiot, however, I neglect to consider the fact that Shu might not want peace once war is declared. He might, in fact, be well up for a spot of war. No sooner have I accepted Liu Bei's offer, a massive army from Yuan Shu appears on my borders, led by one of China's most ferocious warriors, Zheng Jiang.

Our armies clash in a forested area outside a jade mine, and it's set up to be a near-run thing. I'm outnumbered and the forest makes it difficult to judge how exactly the battle is going and where best to aim my artillery. Zheng Jiang deploys her substantial cavalry contingent and attempts to get around my flanks, but I anticipate the move and send spearmen to meet the horses. Unfortunately, this leaves a hole in the centre of my army and Jiang leads her melee troops into it. Only Cao Cao himself and a few units of swordsmen are there to defend it. Then, I get the message that Cao Cao has fallen.

For a second I think my entire army is going to break. But Cao Cao's right-hand man, Xiahou Dun, goes into a berserk-like rage and kills Zheng Jiang, which causes her army to break, and I emerge with what appears to be the most pyrrhic of victories. As it turns out, Cao Cao is only wounded, which is good because otherwise he'd have missed the moment Lady Wu finally declares war.

Though I've been anticipating this it still seems to come out of left-field when it happens. And it's an even bigger problem than I imagined, because I'm still only half-done with Yuan Shu. I need to put an end to this conflict now. Luckily, Yuan Shu's taste of war has changed his mind about peace, and he's much more inclined to put an end to hostilities. He's even willing to become my vassal, which gives my northern border greater security and a portion of his income. I'm excited by the prospect of having a vassal, although it will turn out to be one of the worst decisions I make in the campaign so far.

With Yuan Shu pacified, I wheel my armies around and start marching them toward Lady Wu's territory. The border between us is massive and I have no idea where her armies might be, so I have no choice to





dispatch my three armies wide. I send Dian Wei to secure the south and Lady Bian west, toward Lady Wu's capital of Changsha. Cao Cao's army is still recovering from the massive fight with Zheng Jiang, so I send him behind Lady Bian as support.

SORE EYES

As it happens, though Lady Wu might have declared war on me, she doesn't seem especially prepared for it. To the south, Dian Wei is able to mop up trade ports, salt mines and other settlements with little resistance. My new model army sweeps aside enemy garrisons. In one battle, the enemy army doesn't even get to my lines before my artillery and crossbowmen force them into a retreat, and I lose just one man to a stray arrow.

Lady Bian encounters more resistance, entering into a tricky battle on the western shore of the Yangtze. Nonetheless, she emerges victorious, and opens up the road for Cao Cao to sweep in and take Changsha.

The capture of Changsha is my most significant achievement to date. But it turns out to be a poisoned chalice. During the siege, Xiahou Dun is hit in the eye with an arrow, and his new appearance earns him the personality trait 'Intimidating'.

Cao Cao, it turns out, doesn't like people he thinks look scary, and their relationship now has a wedge between it.

Xiahou Dun losing his eye proves to be symbolic for increasing discord at home. As my cities grow in size, public order begins to plummet, requiring a radical rethink of my urban infrastructure to avoid outright rebellion. But, I

don't have the resources to do it as two of my partners have declared war on Yuan Shu. As Shu's vassal, I need to respond in kind to defend him, or incur dishonour.

I'm not quite sure how I ended up here. I started out this campaign intent on maintaining peace. Now I'm at war with half of China, and if I'm not careful, I may end up at war with myself. ■

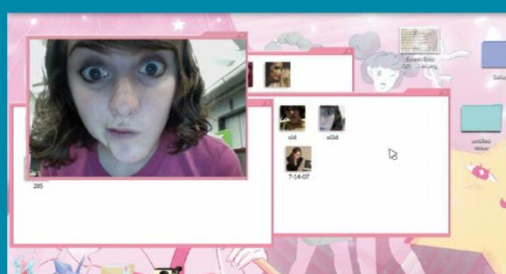
DURING THE SIEGE, XIAHOU DUN IS HIT IN THE EYE WITH AN ARROW





VIRTUAL DESKTOPS

It's more than just snooping, I promise. *By Rachel Watts*



LEFT: It's a computer inside another computer?!



When it comes to videogames, I'm a terribly nosey person. I will go out of my way to rummage through an NPC's belongings, hang around to eavesdrop on conversations and inspect every corner of the environment. So when a game lets me delve into the desktop of a personal computer, I am more than ready for a snoop.

Fabricated desktops have become a popular space for videogame storytelling, with developers transforming the virtual interface from a simple computer layout into a theatrical stage. Looking through text conversations is the new dialogue, photo files provide world-building, and the humble recycle bin is a treasure trove of hidden secrets.

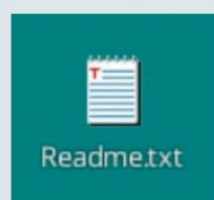
I totally understand how creepy I sound. Looking through a stranger's personal computer in real life is deeply invasive, but desktops can be used in a number of different ways in games without making you feel like you're sticking your nose where it doesn't belong. A desktop can impact heavily on the atmosphere of a game, provide insight into a character's headspace, and transport you to another time. It can be like opening the doors to a haunted house or being invited in for a cup of tea.

Cibele takes the tea route, welcoming you in. You play as a 19-year-old girl named Nina who is chatting with a young man through her online game. The cutesy pastel design and ambient music evoke the dreamy headspace of a young woman in love. You can dig through her diary entries, emails and photos to discover who Nina is, creating a closeness to the character. Looking around her desktop is like peeking into her headspace and seeing her thoughts.

Emily is Away's chat software is another fun example. The game's bulky MSN-era interface perfectly captures the awkwardness of high-school romance. As you chat with Emily, if you choose dialogue answers that are a bit too forward,

TECH SAVVY

Here are the important desktop hotspots worth a mouse click



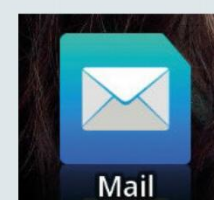
README.TXT

A sinister command but probably worth following.



TRASH

Always check the trash! It's a classic place for hiding some secrets.



EMAILS

There's a lot of reading, of course, but it's all to find some spicy gossip.



VIRTUAL PET

When you click on the squid he spins around on his surfboard. Lovely.

your character will start typing it out, pause to think, then hastily backspace being too shy to say it. As I began chatting with Emily through the game's desktop interface I started to feel like the awkward teen I once was, sending my crush a link to the sneezing panda video and praying they found it as funny as I did.

Hypnospace Outlaw tumbles back further into the past, its brightly coloured vaporwave design capturing the freedom of the internet back in the '90s. Surfing the internet takes

completely new way to elevate game storytelling. Delving into the video databases and piecing together events is wholly satisfying, but Barlow also brings a physicality to his desktops.

As you type words into the search bar in *Her Story* you can hear the sounds of old clacky computer keys, made all the more atmospheric by the fuzzy reflection of a flickering light in the computer's screen. As I'm browsing through the highly classified NSA video files in *Telling Lies* a reflection of the computer user's worried expression comes into focus. Sometimes her eyes dart to look at the time and occasionally she glances around herself, heightening the paranoia.

Interfaces aren't just for computers. Games have also used mock-ups of mobile phone screens as ways of telling their narratives – especially in the horror genre. Games like *Simulacra* and *Replica* capture the thrill of riffling through someone's personal info, trying to piece together the story behind its owner. Glitchy screens, text messages from characters presumed dead, and ghostly faces in the image folder make for a creepy experience.

Virtual desktops in games are more than just an opportunity to indulge my innate nosiness. These games use the structure of a fake computer or phone as a way to tell layered stories, and show that great interface design can set the perfect stage for a narrative to unfold. ■

LOOKING AROUND HER DESKTOP IS LIKE PEEKING INTO HER HEADSPACE

you to a wild west of websites where having a fiery background overlaid with lime green text is a deep form of artistic expression. You can also download a bunch of random crap from its fake internet, like virtual pets, helper bots that are the complete opposite of helpful, or dodgy anti-virus software that definitely isn't malware.

ACCESS GRANTED

The desktop screen is a surprisingly effective place for solving a thrilling mystery. The two standout games are Sam Barlow's detective dramas *Her Story* and *Telling Lies*, which, through their use of FMV, have created a



LEFT: The bulky interfaces of early 2000s computers are a blast from the past.





Explore the galaxy from the comfort of your own bridge.

STAR TREK: BRIDGE COMMANDER

Revisiting the greatest *Star Trek* game. *By Andy Kelly*

If you've ever been a *Star Trek* fan, you've probably imagined what it would be like to sit in the captain's chair of a Federation starship. Over the years there have been dozens of *Star Trek* videogames on PC, from point-and-click adventures to first-person shooters. But *Star Trek: Bridge Commander* is the closest a digital recreation of the show has ever gotten to deeply simulating the experience of being in command of a Starfleet vessel.

The game starts with a bang, literally, as a star mysteriously destabilises and explodes, killing the captain of the USS Dauntless. The ship's relatively inexperienced first officer (that's you) is then forced to take over command and find out what caused the

explosion. Your character is a completely blank slate who never speaks and is never seen, or even named, with first officer Saffi Larsen doing most of the talking for you.

This is initially a little distracting, as charismatic captains who make their opinions known are an important part of the classic *Star Trek* format. But it does ultimately add to the role-playing aspect of the game, making you feel like you *are* the captain, and not just in control of someone else. At the start of each mission you'll get the usual *Star Trek*-style logs, explaining the current mission objectives. But because of your total lack of a voice, these are read out by other members of the crew instead.

On the bridge, the game is locked to a first-person perspective, and you never leave the captain's chair. To

issue orders you have to turn your head with the mouse and face the appropriate member of the bridge crew, then choose from a list of commands. So if a Romulan Warbird suddenly de-cloaks, you turn to Larsen on your right and ask her to go to red alert, which powers up your weapons and shields. It also dims the lights on the bridge, just like in the show, which is a nice touch.

You can also go to yellow alert, which boosts your shields but leaves your weapons inactive: a good way to show an enemy that your guard is up, but you don't want a fight. But in most cases you'll be forced to defend yourself, because *Bridge Commander* is very heavy on combat, which is actually my biggest criticism of it. I

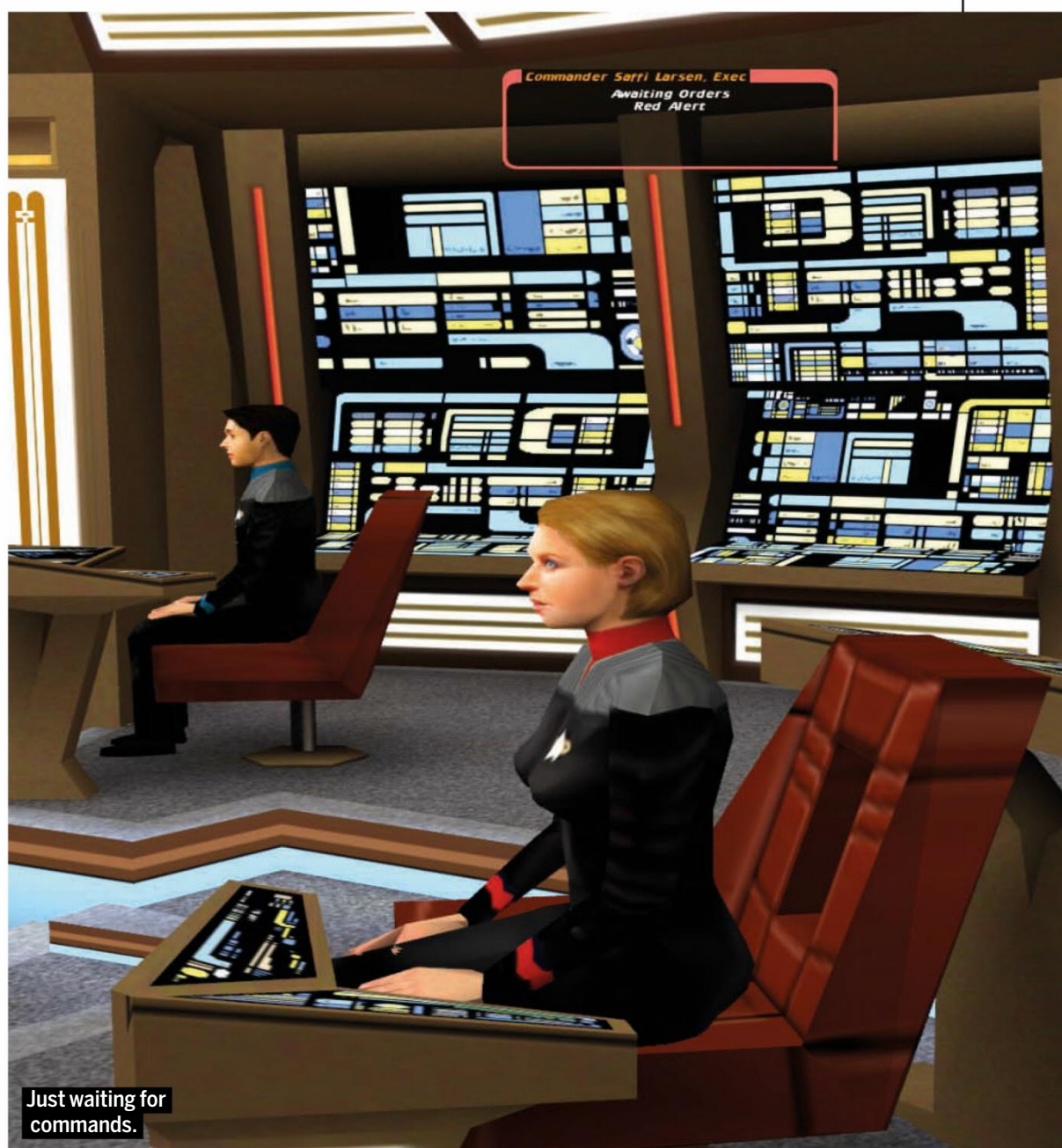
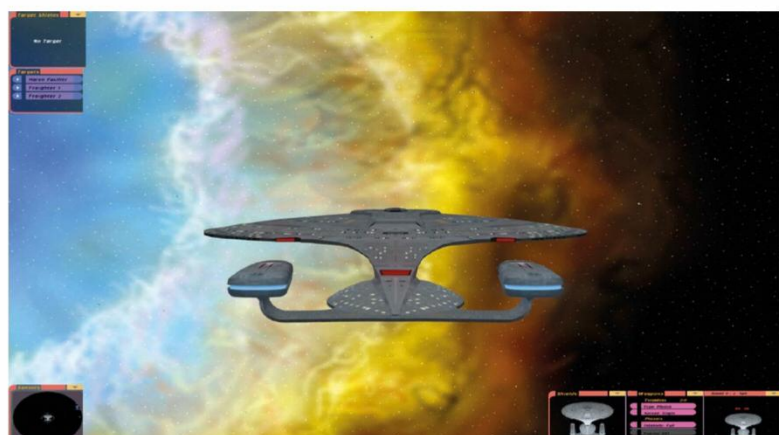
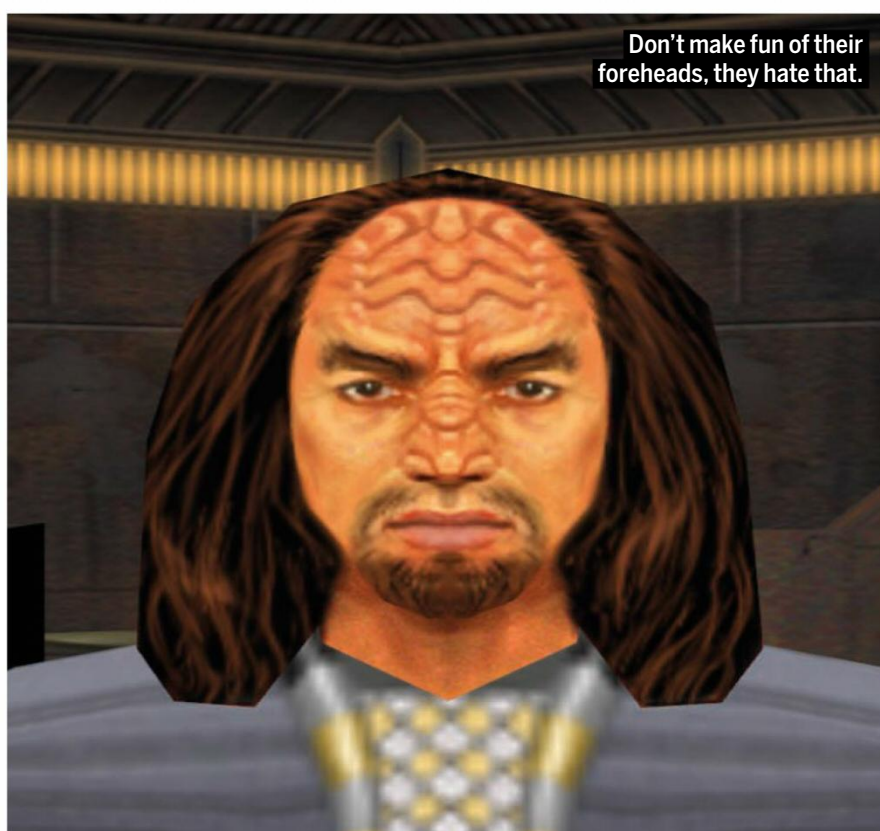
NEED TO KNOW

RELEASED
March 8, 2002

DEVELOPER
Totally Games

PUBLISHER
Activision

LINK
bit.ly/bridgecommander



love Star Trek, particularly The Next Generation, because conflict is usually a last resort. If Captain Jean-Luc Picard can solve a problem without firing a phaser, he always will. But in the game, pretty much every mission results in a space battle. It's primarily a combat sim.

In the middle of a battle, power management is key. Swing your head around to your left and you'll see your Solian chief engineer, Brex. Through him you manage your ship's power output via a series of sliders. If you want a wider scan of the area, boost power to the sensor array. If you're having trouble punching through an enemy's shields, boost your weapons. And if your own shields are taking a hammering, diverting extra power to them will increase your resilience to whoever is currently firing at you.

Characters in Star Trek are always diverting power to various systems to increase their effectiveness, so it's marvellous to see that turned into a game system in *Bridge Commander*. But it's all about the balancing act. Pull too much juice from the ship and your power transmission grid won't be able to cope, reducing your

DEEP SPACE *Some great Bridge Commander mods*



DELTA QUADRANT PACK - JL STUDIOS

In *Star Trek: Voyager*, the titular starship got lost in the dangerous, uncharted Delta Quadrant. This pack includes 44 ships and 20 planets from the show, including *Voyager* itself and several Borg craft.



CROSSFIELD CLASS - THATGUYBRIAN

This adds *Discovery*'s Crossfield class starship to the game. If you've ever wondered if the *Discovery* could take the *Enterprise* in a battle, this is your chance to pit them against each other.



DEFIANT BRIDGE - LUROK91

If you fancy a change from the game's default bridge designs, this replaces it with that of the USS *Defiant* – a warship that played a major role in the events of *Star Trek: Deep Space Nine*.



BETTER STARFIELD - IGNIS

Bridge Commander's default starfield is distractingly bad, with the same handful of stars repeated infinitely. This replacement by Ignis is vastly superior, and gives a sense of distance.

overall effectiveness. This power-juggling mechanic is at the core of the game's many battles, and yelling orders at Brex as the bridge shakes and sparks fly out of the consoles can be hugely exciting.

ORDER UP

Bridge Commander captures the drama of a *Star Trek* space battle brilliantly. The screen judders as you take damage, the red alert alarm

wails, and your crew shout updates about the status of the ship and the enemy's movements. You can order your tactical officer, Felix Savali, to target and attack at will or you can step in and take control, manually targeting and firing the ship's arsenal of phasers and photon torpedoes. Honestly, most of the time you'll rely on Savali to do the hard work, because battles can go on for a long time in *Bridge Commander*. Sitting



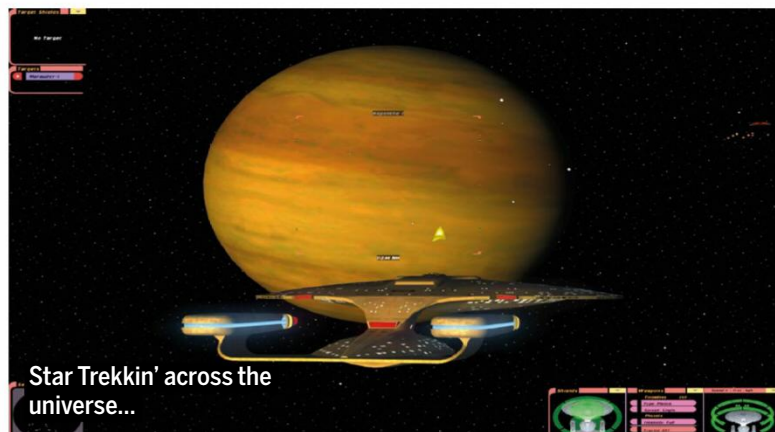
Make it so! Number one!
Engage!



The Andorians were one of the founders
of the United Federation of Planets.



Star Trekkin' across the
universe...



» back, saying “make it so”, and letting someone else do the work feels a lot more captain-like anyway.

There are some non-combat mission objectives, including delivering VIPs, rescuing people, beaming people aboard your ship, and picking up cargo. But this all happens off-screen, with your crew merely telling you about it rather than you witnessing it first-hand. It would have been nice to leave the bridge and visit other locations. Maybe stopping at Ten Forward for a drink, or checking up on someone in sickbay. But in this game, the life of a captain takes place entirely on the bridge. Even just taking a few conversations in your ready room would have added visual variety.

At any time you can hit the spacebar and switch to a third-person view, which gives you a clearer view of your surroundings. There are some dramatic visuals here, including colourful alien suns and asteroid fields, but technically it's pretty ropey, with distractingly low-res textures. You can fly the ship manually in third-person, but it's much more Trek-like to switch back to the bridge and order your Bajoran flight

controller, Kiska LoMar, to move the USS Dauntless between planets and other points of interest.

But after a few hours of play, you'll almost certainly get sick of your crew repeating the same handful of barks over and over again during combat. “Moving into attack range! Lining up forward torpedo tubes! Sweeping through phaser arcs!” Sound design is one area *Bridge Commander* falls short, with a forgettable, repetitive soundtrack, and some missing details like the rumble of your ship's engines. The weapons sound great and the

voice acting is decent, but overall it's a bit of a sonic mess.

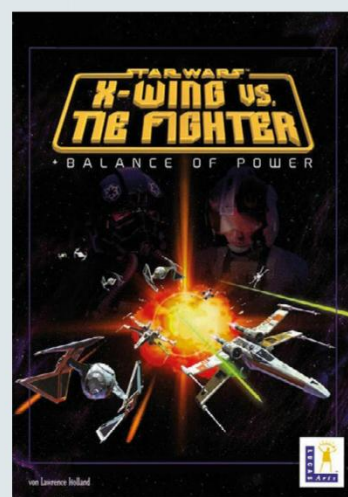
However, you can remedy this. I muted the in-game music and played the score from *Star Trek: The Next Generation* instead, which you can find on Spotify. I also found a ten-hour loop of the ambient engine sounds from the show on YouTube, and played that quietly in the background. This is possibly the nerdiest thing I've ever done, but man, it really improves the game. And thanks to a vibrant modding community, there are countless other

FINAL FRONTIER

A brief history of Bridge Commander

Prior to creating *Bridge Commander*, California-based developer Totally Games worked on a number of classic space sims, including the *X-Wing* and *TIE Fighter* series. It was then approached by Activision in 1998 to make a game based on *Star Trek*, and the studio spent six months researching,

designing, and testing out ideas, until it settled on giving players the chance to sit in the captain's chair aboard a Federation starship. Totally Games later developed PC flight sim *Secret Weapons Over Normandy*, before shifting its attention to mobile games. Its final release was back in 2011.





DATA DETERMINES THAT THE EXPLODING STAR WAS NOT A NATURAL EVENT

ways to tinker with the experience, whether you want to improve the visuals or command ships from the other Star Trek series.

There's some nice stuff in *Bridge Commander* for Star Trek fans, including guests occasionally joining your crew. In your first stint as captain you're joined by none other than Jean-Luc Picard, who sits beside you and explains some of the game's systems. Getting Patrick Stewart to reprise his role as Picard, and then using him as essentially an interactive tutorial, is a wasted opportunity. But it's still cool to hang out with him regardless, and just hearing his voice lends the game extra authenticity.

You're also joined by Data, voiced by Brent Spiner, when you swap the USS Dauntless for the USS Sovereign partway through the story. Like Deep Space Nine's USS Defiant, the Sovereign was developed after the Battle of Wolf 359 to defend against

the Borg. It's a more advanced ship and nimbler in battle, but I must admit, I prefer the bridge of the Galaxy class Dauntless, which looks just like the one in TNG – albeit with some different colouring.

KESSOK RUN

While aboard your ship, Data determines that the exploding star was not a natural event. This revelation leads to clashes with the Cardassians and a race of aliens invented for the game called the Kessok. Occasionally enemies will hail you, either to surrender or to gloat, which adds to the Star Trek vibe. But I would have liked the option to engage in a little diplomacy, perhaps choosing from dialogue options to try and talk aggressors down or offer to work together. If they ever make another *Bridge Commander*, this would add some much needed non-combat variety.

If you're feeling the urge to replay *Star Trek: Bridge Commander*, you'll be glad to hear that it runs out of the box on Windows 10 without any messing around – although you will want to install the official 1.1 patch first. Finding a copy, however, might

be a little trickier. It's been out of print for years, and no digital storefronts currently offer it. This is the case for a lot of *Star Trek* games, but thankfully there are several websites that archive these hard-to-find gems. There's always a way. But I'd love Activision to do a proper re-release or remaster. With *Discovery* and *Picard* getting people into Star Trek again, there's never been a more perfect time.

It's hardly a looker – even by 2002 standards – but gaze beyond the low-poly characters and strangely flat-looking viewscreen conversations and developer Totally Games did a very decent job of capturing the ambience of a Star Trek ship. And if you can't stomach the lo-fi visuals, you could always give Ubisoft's *Star Trek: Bridge Crew* a go. It offers a similar experience, with modern production values, a TNG-themed bridge and VR support. But it's not as deep as *Bridge Commander*, designed with accessibility and co-op play in mind, so it's not quite the same. Not many vintage *Star Trek* games are worth playing today, but sitting in the captain's chair in *Bridge Commander* still has the power to thrill. ■

STEVEN
MESSNER

Did you know that the lint that collects in your pockets is actually called 'gnurr'? Well now you do. Oh, and here are eight games you should definitely play.

BRAVE NEW WORLD



CAVES OF QUD

cavesofqud.com

→ I love this minimal, yet sprawling and complex, roguelike about exploring a surreal, alien jungle that has sprouted on top of the chromium caverns of a lost civilisation. Qud is a deeply weird place to visit, full of sentient plant merchants, villages where an ape is the mayor, and a race of bear engineers.

GOODBYE LIFE



FINAL FANTASY XIV

finalfantasyxiv.com

→ Seven years and three expansions later, *Final Fantasy XIV* has easily become the best MMO around thanks to its charming story that's basically an epic, long-running Saturday morning cartoon. I'll take Alphinaud over all the dour emo kids of *Final Fantasy*'s single-player games any day.

SPIRITUAL SEQUEL

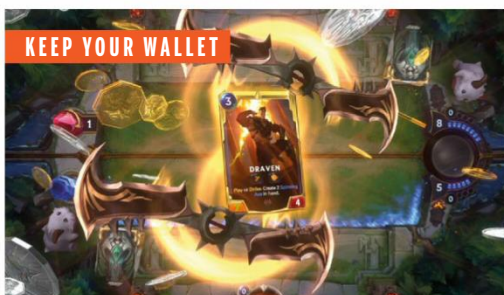


CRYING SUNS

cryingsuns.com

→ We'll probably never get a proper *FTL* sequel, but it turns out *Crying Suns* is a damn good stand-in. I really enjoy the game's emphasis on storytelling, despite its roguelike structure. Being a clone sent on a suicide mission to save the galaxy is a compelling setup that soon turns into a sweeping space epic.

KEEP YOUR WALLET



LEGENDS OF RUNETERRA

playruneterra.com

→ What's this? A fun card game that doesn't want to milk you for hundreds of dollars just to be competitive? It can't be! *Legends of Runeterra* is a *League of Legends* spin-off with a generous reward system and all the tense, card slinging action you'd expect. It's accessible, charming, and lots of fun.

MUST



PLAY

A PERSONAL LIST
OF THE BEST
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by Steven Messner

WARLORDS AND POETS



TOTAL WAR: THREE KINGDOMS

www.totalwar.com/games/three-kingdoms

→ This game's so good it made me read a book – and not just an easy book, either. Its source material is sprawling and not at all accessible, but *Total War* nails this era of Chinese history, deftly balancing historical accuracy and legend and adding to the *Total War* formula with expanded diplomacy and espionage.

HELICOPTER PARENTS

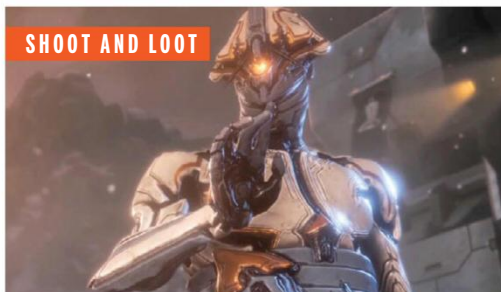


CHINESE PARENTS

bit.ly/37HPvYT

→ I never tire of this cute life sim about the pressures and stresses of growing up in modern China. It's both funny, insightful, and surprisingly easy to lose an evening to as you manage your different stats while trying to keep your head above water at school, without sacrificing your sanity at the same time.

SHOOT AND LOOT



WARFRAME

warframe.com

→ Sure, it might seem like *Destiny 2*, but then I remember that there's a weapon that lets you synthesise your own music. Or a plague that players can spread to one another. Or Gundam-style flight suits. Or ship-to-ship combat in space. Or a hunting minigame that rewards you with cute stuffed animals.

NO SURVIVAL



ESCAPE FROM TARKOV

escapefromtarkov.com

→ *Escape From Tarkov*'s gun modding is so unbelievably detailed you can easily spend hours making obscene creations like an assault rifle with five different sights. It's also a bold evolution of survival shooters like *DayZ* that ups the tension and the ante to the point where I'm frequently shaking from the adrenaline.



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IT'S ALL OVER...

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DEPARTMENT
OF RETRO
CLASSIFICATION

18th March 2020

Dear PC Gamer,

Greetings. We at the Department of Retro Classification write to you as the only official, internationally recognised arbiter of retro gaming. Our role is to let billions of aging journalists and gamers the world over know what is and is not acceptable to be nostalgic about, bring to certain specialised conventions, or, indeed, print in a magazine retro special.

We write to you today with an announcement we hope you can convey to your vast and ever-growing readership.

As times change, so are we forced to change with them. With every year that passes, games inevitably become older and eventually pass into retro-hood. We know this can be troubling for sensitive members of the community, but in a world where full-grown adults walk the streets who were born after the release of *Halo: Combat Evolved*, we find we must be ever-vigilant.

With that in mind, we must unfortunately share this list of games and items which, as of April 2020, are now officially retro, and should be referred to appropriately:

- *Mass Effect 1 and 2 (but not 3)*
- *Red Dead Redemption*
- *The first Darksiders*
- *Kane & Lynch*
- *The Ouya*
- *Minecraft*
- *League of Legends*
- All desktop computers
- *Tom Clancy's H.A.W.X*
- That thing where if you can make someone look at a circle, you're allowed to punch them

You may now commence fondly reminiscing and/or writing insufferable thinkpieces about the above.

Yours sincerely,

Dir. John Pongman

Department of Retro Classification

...UNTIL **APRIL 30**



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